

EAST Search History

1 of 2
10/785,229

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L9	1964	502/209 OR 502/305 OR 502/306 OR 502/321 OR 560/231 OR 560/241	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2006/03/22 06:22
L10	1071	L9 AND (CARBOXYLIC OR CARBOXYLIC OR CARBOXYLATE OR ACETIC OR PROPIONIC)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2006/03/22 06:22
L11	974	L10 AND (CATALYST OR HETEROPOLYACID OR TUNGSTATE OR MOLYBDATE OR VANADATE OR SILICOTUNGSTATE OR PHOSPHOVANADATE OR PHOSPHOMOLYBDATE OR PHOSPHOTUNGSTATE OR SILICOPHOSPHOTUNGSTATE OR SILICOPHOSPHOVANADATE OR SILICOPHOSPHOMOLYBDATE OR SILICOPHOSPHOVANDIC OR SILICOPHOSPHOMOLYBDIC OR SILICOPHOSPHOTUNGSTIC OR TUNGSTIC OR MOLYBDIC OR VANDADIC OR SILICOTUNGSTIC OR PHOSPHOVANDADIC OR PHOSPHOMOLYBDIC)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2006/03/22 06:22
L12	330	L11 AND (OLEFIN OR OLEFINE)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2006/03/22 06:22
L13	298	L12 AND (GAS OR VAPOR OR VAPOUR)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2006/03/22 06:22
L14	226	L13 AND (SUPPORT OR SUPPORTED OR SUPPORTING)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2006/03/22 06:22
L15	221	L14 AND (REACTOR OR COLUMN OR COLUMNAR OR VESSEL OR APPARATUS OR APPARATTUS OR APARATTUS)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2006/03/22 06:22

21

10/785, 229

EAST Search History

L16	143	L15 AND CONTACTING	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2006/03/22 06:22
L17	6	I16 and (lower adj aliphatic adj carboxylic)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2006/03/22 06:23
L18	54	I16 and ester	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2006/03/22 08:51
L19	0	I18 not I18	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2006/03/22 06:23
L20	48	I18 not I17	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2006/03/22 06:23
L21	10	<i>CLASSE + SUBCLASSED (ON PREV. PAGE) EVERY</i> I9 and (lower adj (olefin or olefine)) and ((carboxylic adj acid adj ester) or (carboxylic adj ester)) and ((gas adj phase) or ((vapor or vapour) adj phase))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2006/03/22 08:53

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IPC reform
NEWS 4 DEC 23 New IPC8 SEARCH, DISPLAY, and SELECT fields in USPATFULL/
USPAT2
NEWS 5 JAN 13 IPC 8 searching in IFIPAT, IFIUDB, and IFICDB
NEWS 6 JAN 13 New IPC 8 SEARCH, DISPLAY, and SELECT enhancements added to
INPADOC
NEWS 7 JAN 17 Pre-1998 INPI data added to MARPAT
NEWS 8 JAN 17 IPC 8 in the WPI family of databases including WPIFV
NEWS 9 JAN 30 Saved answer limit increased
NEWS 10 JAN 31 Monthly current-awareness alert (SDI) frequency
added to TULSA
NEWS 11 FEB 21 STN AnaVist, Version 1.1, lets you share your STN AnaVist
visualization results
NEWS 12 FEB 22 Status of current WO (PCT) information on STN
NEWS 13 FEB 22 The IPC thesaurus added to additional patent databases on STN
NEWS 14 FEB 22 Updates in EPFULL: IPC 8 enhancements added
NEWS 15 FEB 27 New STN AnaVist pricing effective March 1, 2006
NEWS 16 FEB 28 MEDLINE/LMEDLINE reload improves functionality
NEWS 17 FEB 28 TOXCENTER reloaded with enhancements
NEWS 18 FEB 28 REGISTRY/REGISTRY enhanced with more experimental spectral
property data
NEWS 19 MAR 01 INSPEC reloaded and enhanced
NEWS 20 MAR 03 Updates in PATDPA: addition of IPC 8 data without attributes
NEWS 21 MAR 08 X.25 communication option no longer available after June 2006
NEWS EXPRESS FEBRUARY 15 CURRENT VERSION FOR WINDOWS IS V8.01a,
CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0c(JP),
AND CURRENT DISCOVER FILE IS DATED 19 DECEMBER 2005.
V8.0 AND V8.01 USERS CAN OBTAIN THE UPGRADE TO V8.01a AT
<http://download.cas.org/express/v8.0-Discover/>

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***** STN Columbus *****

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TOTAL SESSION 0.84

FULL ESTIMATED COST

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FILE LAST UPDATED: 21 Mar 2006 (20060321/ED)

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=> S ESTER AND HETEROPOLYACID AND (GAS OR VAPOR OR VAPOUR) AND (OLEFINE OR OLEFIN)
AND (CARBOXYLIC OR ACETIC OR PROPIONIC OR ACRYLIC OR METHACRYLIC)

575051 ESTER
427684 ESTERS
802811 ESTER (ESTER OR ESTERS)
1348 HETEROPOLYACID
936 HETEROPOLYACIDS
1913 HETEROPOLYACID (HETEROPOLYACID OR HETEROPOLYACIDS)

1485523 GAS
503872 GASES
1665041 GAS (GAS OR GASES)

504059 VAPOR
70554 VAPOURS
545733 VAPOR (VAPOR OR VAPOURS)

2270 VAPOUR
187 VAPOURS
2448 VAPOUR (VAPOUR OR VAPOURS)

108 OLEFINE
250 OLEFINS
355 OLEFINE (OLEFINE OR OLEFINS)

97518 OLEFIN
100671 OLEFINS
152638 OLEFIN (OLEFIN OR OLEFINS)

236013 CARBOXYLIC
47 CARBOXYLICS
236032 CARBOXYLIC (CARBOXYLIC OR CARBOXYLICS)
221349 ACETIC

STN SEARCH TRANSCRIPT

10/785,229

22 ACETICS

221358 ACETIC
(ACETIC OR ACETICS)
54670 PROPIONIC
8 PROPIONICS
54674 PROPIONIC
(PROPIONIC OR PROPIONICS)
258085 ACRYLIC
1322 ACRYLIC
258457 ACRYLIC
(ACRYLIC OR ACRYLICS)
73789 METHACRYLIC
6 METHACRYLICS
73793 METHACRYLIC
(METHACRYLIC OR METHACRYLICS)

L1 5 ESTER AND HETEROPOLYACID AND (GAS OR VAPOR OR VAPOUR) AND (OLEFIN OR OLEFIN) AND (CARBOXYLIC OR ACETIC OR PROPIONIC OR ACRYLIC OR METHACRYLIC)

=> D 1-5 IBIB ABS

L1 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER:
DOCUMENT NUMBER:
142:40422

Support and catalyst for use in producing lower aliphatic carboxylic acid ester, catalyst manufacture process and method of use

Kadowaki, Etsuko; Higashi, Tomoyoshi; Oguchi, Wataru; Uchida, Hiroshi; Narumi, Kousuke
Showa Denko K.K., Japan
U.S. Pat. Appl. Publ., 27 pp., Cont.-in-part of U.S. Ser. No. 70-259, abandoned.
CODEN: USXCO

DOCUMENT TYPE:
LANGUAGE:
FAMILY ACC. NUM. COUNT: 3

PATENT INFORMATION:
PATENT NO.

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004242918	A1	20041202	US 2004-785229	20040225
JP 2002079090	A2	20020319	JP 2001-173624	20010608
WO 2002000589	A2	20020103	WO 2001-JP5532	20010627
WO 2002000589	A3	20020418		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GN, GM, HR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, NZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GN, GW, ML, MR, NE, SN, TD, TG				
US 200302837	A1	20030213	US 2001-889354	20010717
JP 2002316048	A2	20021029	JP 2001-373675	20011207
WO 2002064541	A1	20020822	WO 2002-JP1156	20020212
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GN, GM, HR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, NZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GN, GW, ML, MR, NE, SN, TD, TG				

US 2003118497
ZA 2002009804
ZA 2003005143
A
A
A
20040312

PRIORITY APPLN. INFO.:

A1 20030626 US 2002-70259 20020304
A 20030819 2A 2002-9804 20021203
A 200305143 2A 2003-5143 20030702
JP 2000-192964 20000627
US 2000-218803P 20000718
JP 2001-36038 A 20010213
US 2001-273343P P 20010306
WO 2001-JP5532 W 20010627
US 2001-889354 B2 20010717
JP 2001-373675 A 20011207
WO 2002-JP1156 W 20020212
US 2002-70259 B2 20020304

OTHER SOURCE(S): CASREACT 142:40422

AB The catalyst is produced by a process comprising a step of contacting the catalyst (heteropolyacid salts or their salts) with a gas containing at least one member selected from water, lower aliphatic carboxylic acids and lower aliphatic alcs. The catalyst can exhibit high initial activity and high space time yield, ensure sufficiently long catalyst life in practice in industry, and can prevent the production of byproduct materials. A siliceous support is provided for a catalyst, which has a Si content of 39.7-46.3% or a Si content of 85-99% in terms of silicon dioxide or a crush strength of 30 N or more. By the use of a catalyst comprising the support, a lower aliphatic carboxylic acid ester is produced from lower olefin and a lower aliphatic carboxylic acid in a gas phase without causing great reduction of catalytic activity or cracking or abrasion of the catalyst.

L1 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER:
DOCUMENT NUMBER:
140:43772

Process and catalysts for the production of aliphatic carboxylic acid esters from lower aliphatic carboxylic acids and lower olefins

Watanabe, Kyoichi; Uchida, Hiroshi
Showa Denko K. K., Japan
PCT Int. Appl., 30 pp.
CODEN: PIXXD2

DOCUMENT TYPE:
LANGUAGE:
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:
PATENT NO.

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003106398	A1	20031224	WO 2002-JP11683	20021108
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GN, GM, HR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, NZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GN, GW, ML, MR, NE, SN, TD, TG				
JP 2004018404	A2	20040122	JP 2002-172502	20020613
AU 2002339752	A1	20031231	AU 2002-339752	20021108
CN 1503775	A	20040609	CN 2002-802149	20021108
EP 1511712	A1	20050309	EP 2002-778080	20021108
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IL, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
US 2005203310	A1	20050915	US 2003-343486	20030527
PRIORITY APPLN. INFO.:			US 2002-172502 A 20020613	
			US 2002-389281P P 20020618	

OTHER SOURCE(S): WO 2002-JP11683 W 20021108
WO 2002-JP11686 W 20021108
CASREACT 140:43772
AB Lower aliphatic carboxylic acid esters (e.g., Et acetate) are prepared by esterifying a lower aliphatic carboxylic acid and a lower olefin (e.g., ethylene) into a lower aliphatic carboxylic acid ester using an acid catalyst in a vapor phase, when the system is controlled to contain substantially no acetylene compounds, the deterioration of the catalyst can be remarkably prevented from proceeding and in turn a stable operation can be continuously performed for a long time. Examples of the acid catalyst which can be used in the present invention include compounds widely known in general as an acid catalyst, such as a heteropolyacid and a salt; process flow diagrams are presented.
REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:68415 CAPLUS
DOCUMENT NUMBER: 132:94968
TITLE: Process and catalysts for the manufacture of esters by the addition reaction of lower alkenes with aliphatic monocarboxylic acids with removal of nitrogenous bases from the reactants
INVENTOR(S): Coker, Eric Nicholas; Froom, Simon Frederick Thomas; Smith, Warren John
PATENT ASSIGNEE(S): BP Chemicals Limited, UK
SOURCE: PCT Int. Appl., 16 pp.
CODEN: F1XXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION: PATENT NO. KIND DATE APPLICATION NO. DATE
WO 200003966 A1 20000127 WO 1999-GB2099 19990701
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, GR, HU, ID, IN, IS, JP, KE, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NA, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BE, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
CA 2336946 AA 20000127 CA 1999-2336946 19990701
AU 9946323 A1 20000207 AU 1999-46323 19990701
BR 9912038 A 20010403 BR 1999-12038 19990701
EP 1097120 A1 20010509 EP 1999-929533 19990701
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO
JP 2002520380 T2 20020709 JP 2000-560076 19990701
TM 502016 B 20020911 TM 1999-8811867 19990713
US 2001047107 A1 20011129 US 2001-752835 20010103
ZA 2001000331 A 20020111 GB 1998-15117 A 19980714
WO 1999-GB2099 19990701
PRIORITY APPLN. INFO.: Lower aliphatic esters are prepared in high yield and selectivity by the addition reaction of a lower olefin (e.g., ethylene) with a saturated lower aliphatic monocarboxylic acid in the vapor phase in the presence of a heteropolyacid catalyst; the reactants are rendered substantially free of basic, nitrogen compounds, by contact with an acidic, heterogeneous solid prior to being brought into contact with the heteropoly acid catalyst.

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
L1 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:192121 CAPLUS
DOCUMENT NUMBER: 126:185811
TITLE: Process and heteropolyacid catalysts for the carboxylic acids

INVENTOR(S): Atkins, Martin Philip; Sharma, Bhushan
PATENT ASSIGNEE(S): BP Chemicals Limited, UK
SOURCE: Eur. Pat. Appl., 23 pp.
CODEN: EPXDXM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION: PATENT NO. KIND DATE APPLICATION NO. DATE
EP 757027 A1 19970205 EP 1996-305369 19960722
EP 757027 B1 20000405
R: BE, DE, FR, GB, NL, SE
EP 959064 A1 19991124 EP 1999-113642 19960722
EP 959064 B1 20011212
R: BE, DE, FR, GB, NL, SE
US 5861530 A 19990119
CA 2182558 AA 19970203
JP 09118647 A2 19970506
CN 1150585 A 19970528
CN 1085197 B 20020522
JP 2005298527 A2 20051027
PRIORITY APPLN. INFO.: Lower aliphatic esters (e.g., EtO2CCH3) are prepared by reacting a lower olefin (e.g., H2C=CH2) with a saturated lower aliphatic monocarboxylic acid (e.g., AcOH) in the vapor phase in the presence of a heteropolyacid catalyst, characterized in that an amount of water in the range from 1-10 mol% (based on the total of olefin, aliphatic monocarboxylic acid and water) is added to the reaction mixture during the reaction. The presence of water enhances the ester yield. The reaction mixture may optionally contain a dielectric (e.g., EtOEt) to minimize byproduct formation.

AB Lower aliphatic esters (e.g., EtO2CCH3) are prepared by reacting a lower olefin (e.g., H2C=CH2) with a saturated lower aliphatic monocarboxylic acid (e.g., AcOH) in the vapor phase in the presence of a heteropolyacid catalyst, characterized in that an amount of water in the range from 1-10 mol% (based on the total of olefin, aliphatic monocarboxylic acid and water) is added to the reaction mixture during the reaction. The presence of water enhances the ester yield. The reaction mixture may optionally contain a dielectric (e.g., EtOEt) to minimize byproduct formation.

L1 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1994:579103 CAPLUS
DOCUMENT NUMBER: 121:179103
TITLE: Preparation of carboxylate esters
INVENTOR(S): Nagamura, Hiroo; Yagi, Hirobumi; Morita, Takehiko; Sugimura, Toshiro
PATENT ASSIGNEE(S): Nippon Catalytic Chem Ind, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.
CODEN: JKKXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION: PATENT NO. KIND DATE APPLICATION NO. DATE
JP 06072951 A2 19940315 JP 1993-76705 19930402
PRIORITY APPLN. INFO.: JP 1992-180824 A1 19920708

AB The title compds. are prepared by gas-phase treating carboxylic acids with olefins in the presence of O and acid salts of heteropoly acids. A reactor containing HO.5Cs2.5PW12O40 (preparation given) was fed with a 1:13:0.02 mixed gases of acrylic acid, CH2:CH2, and O at 150° and atmospheric for 3 h to give 49.7% Et acrylate.

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(FILE 'HOME' ENTERED AT 09:10:45 ON 22 MAR 2006)

L1 FILE 'CAPLUS' ENTERED AT 09:12:50 ON 22 MAR 2006
5 S ESTER AND HETEROPOLYACID AND (GAS OR VAPOR OR VAPOUR) AND (OL OR VAPOR) AND (CARRIER OR SUPPORT OR SUPPORTED) AND (GAS OR VAPOR OR VAPOUR) AND (OLEFINE OR OLEFIN) AND (CARBOXYLIC OR ACETIC OR PROPIONIC OR METHACRYLIC)

=> S ESTER AND (CARRIER OR SUPPORT OR SUPPORTING OR SUPPORTED) AND (GAS OR VAPOR OR VAPOUR) AND (OLEFINE OR OLEFIN) AND (CARBOXYLIC OR ACETIC OR PROPIONIC OR METHACRYLIC)

575051 ESTER
427684 ESTERS
802811 ESTER

264065 CARRIER
147441 CARRIERS
345441 CARRIER
441539 SUPPORT
123551 SUPPORTS
524635 SUPPORT

89557 SUPPORTING
5 SUPPORTINGS
89561 SUPPORTING (SUPPORTING OR SUPPORTINGS)

197847 SUPPORTED
1485523 GAS
503872 GASES
1665041 GAS

504059 VAPOR
70554 VAPORS
545733 VAPOR

2270 VAPOUR
187 VAPOURS
2448 VAPOUR

108 OLEFINE
250 OLEFINES
355 OLEFINE

97518 OLEFIN
100671 OLEFINS
152638 OLEFIN

236013 CARBOXYLIC
47 CARBOXYLICS

236032 CARBOXYLIC
(CARBOXYLIC OR CARBOXYLICS)

221349 ACETIC
22 ACETICS

221358 ACETIC
(ACETIC OR ACETICS)

54670 PROPIONIC
8 PROPIONICS

54674 PROPIONIC
(PROPIONIC OR PROPIONICS)

258085 ACRYLIC
1322 ACRYLICS

258457 ACRYLIC
(ACRYLIC OR ACRYLICS)

73789 METHACRYLIC
6 METHACRYLICS

73793 METHACRYLIC
(METHACRYLIC OR METHACRYLICS)

L2 53 ESTER AND (CARRIER OR SUPPORT OR SUPPORTING OR SUPPORTED) AND (GAS OR VAPOR OR VAPOUR) AND (OLEFINE OR OLEFIN) AND (CARBOXYLIC OR ACETIC OR PROPIONIC OR ACRYLIC OR METHACRYLIC)

=> S L2 AND (SILICOTUNGSTIC OR PHOSPHOTUNGSTIC OR PHOSPHOMOLYBDIC OR SILICOMOLYBDIC OR SILICOVANADOTUNGSTIC OR PHOSPHOVANADOTUNGSTIC OR PHOSPHOVANADOMOLYBDIC)

1331 SILICOTUNGSTIC
4744 PHOSPHOTUNGSTIC
2773 PHOSPHOMOLYBDIC
1169 SILICOMOLYBDIC

1 SILICOVANADOTUNGSTIC
11 PHOSPHOVANADOTUNGSTIC

L3 57 PHOSPHOVANADOTUNGSTIC
1 L2 AND (SILICOTUNGSTIC OR PHOSPHOTUNGSTIC OR PHOSPHOMOLYBDIC OR SILICOMOLYBDIC OR SILICOVANADOTUNGSTIC OR PHOSPHOVANADOTUNGSTIC OR PHOSPHOVANADOMOLYBDIC)

=> D

L3 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:1036764 CAPLUS
DN 142:40422

TI Support and catalyst for use in producing lower aliphatic carboxylic acid ester, catalyst manufacture process and method of use

IN Kadowaki, Etsuko; Higashi, Tomoyoshi; Oguchi, Wataru; Uchida, Hiroshi; Narumi, Kousuke

PA Showa Denko K.K., Japan

SO U.S. Pat. Appl. Publ., 27 pp., Cont.--in-part of U.S. Ser. No. 70,259, abandoned.

DT Patent
LA English

FAN CNT 3

PATENT NO. KIND DATE APPLICATION NO. DATE

PI US 2004242918 A1 20041202 US 2004-785229 20040225
JP 2002079090 A2 20020319 JP 2001-173524 20010608
WO 2002000589 A2 20020103 WO 2001-075532 20010627
WO 2002000589 A3 20020418

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MX, MY, NZ, NO, NZ, PL, PT, RO, RU, SD, SE, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,

APPLICANTS

DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
US 2003032837 20010717
A1 20030213 US 2001-889354
JP 2002316048 JP 2001-373675 20011207
WO 2002064541 WO 2002-JP1156 20020212
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, GR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT,
LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, NZ, OM, PH, PL, PT,
RO, RU, SD, SE, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG,
US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, BG, BR, BY, BZ, CA, CH, CN,
RW: GH, GN, KE, KS, LM, LU, MC, NL, PT, SE, TR,
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BF, BJ, CF, CG, CI, CM, GN, GO, GW, ML, MR, NE, SN, TD, TG
US 2003118497 US 2002-70259 20020304
ZA 2002009804 A 20030819 20021203
ZA 200305143 A 20040312 20030702
PRAI JP 2000-192964 A 20000627
US 2000-218803P P 20000718
JP 2001-36038 P 20010213
US 2001-273343P P 20010306
WO 2001-JP5532 W 20010627
US 2001-889354 B2 20010717
JP 2001-373675 A 20011207
WO 2002-JP1156 W 20020212
US 2002-70259 B2 20020304
OS CASREACT 142:40422

=> S L2 AND HETEROPOLYACID
1348 HETEROPOLYACID
936 HETEROPOLYACID
1913 HETEROPOLYACID
(HETEROPOLYACID OR HETEROPOLYACIDS)
L4 1 L2 AND HETEROPOLYACID

=> D
L4 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:1036764 CAPLUS
DN 142:40422
TI Support and catalyst for use in producing lower aliphatic
carboxylic acid ester, catalyst manufacture process and
method of use
IN Kadowaki, Etsuko; Higashi, Tomoyoshi; Oguchi, Wataru; Uchida, Hiroshi;
Narumi, Kousuke
PA Showa Denko K.K., Japan
SO U.S. Pat. Appl. Publ., 27 pp., Cont.-in-part of U.S. Ser. No. 70,259,
abandoned.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 3

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	A1	20041202	US 2004-785229	20040225
JP	A2	20020319	JP 2001-173624	20010608
WO	A2	20020103	WO 2001-JP5532	20010627
WO	A3	20020418		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, GR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, BG, BR, BY, BZ, CA, CH, CN,			

RW: GH, GN, KE, KS, LM, LU, MC, NL, PT, SE, TR, BF,
DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
US 2003032837 20010717
A1 20030213 US 2001-889354
JP 2002316048 JP 2001-373675 20011207
WO 2002064541 WO 2002-JP1156 20020212
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, GR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT,
LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, NZ, OM, PH, PL, PT,
RO, RU, SD, SE, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG,
US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, BG, BR, BY, BZ, CA, CH, CN,
RW: GH, GN, KE, KS, LM, LU, MC, NL, PT, SE, TR,
CY, DE, DJ, DK, ES, FI, FR, GB, GR, IE, IT, LU, ML, MR, NE, SN, TD, TG
BF, BJ, CF, CG, CI, CM, GN, GO, GW, ML, MR, NE, SN, TD, TG
US 2003118497 US 2002-70259 20020304
ZA 2002009804 A 20030819 20021203
ZA 200305143 A 20040312 20030702
PRAI JP 2000-192964 A 20000627
US 2000-218803P P 20000718
JP 2001-36038 P 20010213
US 2001-273343P P 20010306
WO 2001-JP5532 W 20010627
US 2001-889354 B2 20010717
JP 2001-373675 A 20011207
WO 2002-JP1156 W 20020212
US 2002-70259 B2 20020304
OS CASREACT 142:40422

=> L2 NOT L3
L2 IS NOT A RECOGNIZED COMMAND
The previous command name entered was not recognized by the system.
For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).

=> S L2 NOT L3
L5 52 L2 NOT L3
=> LOG HOLD
COST IN U.S. DOLLARS
FULL ESTIMATED COST
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)
CA SUBSCRIBER PRICE
SESSION WILL BE HELD FOR 60 MINUTES
STN INTERNATIONAL SESSION SUSPENDED AT 09:22:59 ON 22 MAR 2006
Connecting via Winsock to STN

Welcome to STN International! Enter x:x
LOGINID:SSSPTAL623ZCT
PASSWORD:
***** RECONNECTED TO STN INTERNATIONAL *****
SESSION RESUMED IN FILE 'CAPLUS' AT 09:35:56 ON 22 MAR 2006
FILE 'CAPLUS' ENTERED AT 09:35:56 ON 22 MAR 2006
COPYRIGHT (C) 2006 AMERICAN CHEMICAL SOCIETY (ACS)

SINCE FILE	TOTAL
ENTRY	SESSION
92.05	92.89

SINCE FILE	TOTAL
ENTRY	SESSION
-3.75	-3.75

L5 ANSWER 2 OF 52 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:238937 CAPLUS
DOCUMENT NUMBER: 142:316483
TITLE: Preparation of lower aliphatic esters by vapor phase reaction of lower olefins with lower aliphatic carboxylic acids in the presence of a heteropoly acid catalyst.
INVENTOR(S): Fullerton, William
PATENT ASSIGNEE(S): BP Chemicals Limited, UK
SOURCE: PCT Int. Appl., 22 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005023747	A1	20050317	WO 2004-GB3619	20040824
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, EG, ES, FI, GB, GE, GH, GM, GR, GU, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MM, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, BG, BR, BU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GN, GW, ML, MR, NE, SN, TD, TG				

PRIORITY APPLN. INFO.: CASREACT 142:316483 GB 2003-20692 A 20030903
OTHER SOURCE(S):
AB A process for making lower aliphatic esters comprises reaction of lower olefins with saturated lower aliphatic monocarboxylic acids in the vapor phase using heteropoly acid catalysts at 1200-1800 KPa. In a preparation of EtOAc a steam comprising ethylene 23.81 g/h, HOAc 3.65 mL/h, H₂O 1 mL/h, and Et₂O 0.54 mL/h at 10 barg and gas hour space velocity of 3600 was fed to a reactor packed with silicotungstic acid on silica at 185° to give, after 132 h on stream, byproduct acetaldehyde 0.14 g/1cat/h and MeCOEt 0.007 g/1cat/h.
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 3 OF 52 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:756672 CAPLUS
DOCUMENT NUMBER: 141:279428
TITLE: Processes for the production of alkenyl esters of lower carboxylic acids and process for the production of alkenyl alcohols
INVENTOR(S): Saihata, Meiko; Uchida, Hiroshi
PATENT ASSIGNEE(S): Showa Denko K.K., Japan
SOURCE: PCT Int. Appl., 35 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004078698	A1	20040916	WO 2004-JP2216	20040225
W: AE, AE, AG, AL, AM, AM, AT, AT, AU, AZ, AZ, BA, BB, BG, BU, BR, BW, BY, BZ, CA, CH, CN, CO, CO, CR, CR, CU, CU, CZ, DE, DE, DK, DM, DZ, EC, EC, EG, EG, ES, ES, FI, FI, GB, GD, GE, GE, GM, GR, GU, HU, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				

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FULL ESTIMATED COST
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)
CA SUBSCRIBER PRICE
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FILE 'CAPLUS' ENTERED AT 09:12:50 ON 22 MAR 2006
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L5 ANSWER 1 OF 52 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:347066 CAPLUS
DOCUMENT NUMBER: 142:392843
TITLE: Ziegler-Natta catalyst composition for ethylene polymerization
INVENTOR(S): Campbell, Richard E., Jr.; Chen, Linfeng; Painter, Roger B.; Reib, Robert N.; Tilston, Michael W.
PATENT ASSIGNEE(S): Dow Global Technologies Inc., USA
SOURCE: PCT Int. Appl., 18 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005035597	A1	20050421	WO 2004-US26641	20040818
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, EG, ES, FI, GB, GD, GE, GH, GM, GR, GU, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MM, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, BG, BR, BU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GN, GW, ML, MR, NE, SN, TD, TG				

PRIORITY APPLN. INFO.: US 2003-505330P P 20030923
AB A process for the polymerization of olefin monomers comprises the steps of: contacting ethylene or a mixture of ethylene and one or more C4-8 α olefins with a catalyst composition comprising one or more Group 3-10 transition metal containing, Ziegler-Natta, procatalyst compds. (e.g., MgCl₂-supported TiCl₄); one or more alkylaluminum cocatalysts (e.g., triisobutylaluminum); and one or more polymerization control agents (e.g., Et-p-ethoxybenzoate). The process is characterized in that at least one such polymerization control agent is an alkyl or aryl ester of an aliphatic or aromatic (poly) carboxylic acid optionally containing one or more substituents comprising a Group 13, 14, 15, or 16 heteroatom.
REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

IS, KE, KE, KG, KP, KR, KR, KZ, KZ, KZ, LC, LK, LR, LS, LS, LT, LV, LV, MA, MD, MD, MG, MK, MN, MW, MX, MZ, MZ, NA, NI, NI, NO
RW: BW, GH, GM, GM, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BE, BJ, CF, CG, CI, CM, GN, GQ, GW, ML, MR, NE, SN, TD, TG
JP 2004339195 A2 20041202 JP 2004-63428 20040308
JP 2003-61528 A 20030307
US 2003-455588P P 20030319
JP 2003-119758 A 20030424
AB A process for producing a lower aliphatic carboxylic acid alkenyl, comprising reacting a lower olefin, a lower aliphatic carboxylic acid and oxygen in a gas phase in the presence of a catalyst comprising a support having supported thereon a catalyst component containing a compound containing alkali metal and/or alkaline earth metal, an element belonging to Group 11 of the Periodic Table or a compound containing at least one of these elements, and palladium, wherein the conversion of the lower aliphatic carboxylic acid is 80% or less or the concentration of the lower aliphatic carboxylic acid at the reactor outlet is 0.5 mol% or more.
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 4 OF 52 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:756670 CAPLUS
DOCUMENT NUMBER: 141:279426
TITLE: Production processes of lower aliphatic carboxylic acid alkenyl esters and alkenyl alcohol
INVENTOR(S): Saitoh, Meiko; Uchida, Hiroshi
PATENT ASSIGNEE(S): Showa Denko K.K., Japan
SOURCE: PCT Int. Appl., 36 pp.
CODEN: PFXD2
PATENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO. KIND DATE APPLICATION NO. DATE
WO 2004078696 A1 20040916 WO 2004-JP2214 20040225
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EG, ES, FI, GB, GD, GE, GH, GM, GR, GU, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GN, GQ, GW, ML, MR, NE, SN, TD, TG
EP 1603859 A1 20051214 EP 2004-714478 20040225
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK
JP 2004339194 A2 20041202 JP 2004-63363 20040308
JP 2003-61494 A 20030307
US 2003-453951P P 20030313
JP 2003-119757 A 20030424
WO 2004-JP2214 W 20040225
PRIORITY APPLN. INFO.:
AB A process for producing a lower aliphatic carboxylic acid alkenyl, comprising reacting a lower olefin, a lower aliphatic carboxylic acid and oxygen in a gas phase in the presence of a catalyst comprising a support having supported thereon a catalyst component containing a compound containing alkali metal and/or alkaline earth metal, an element belonging to Group 11 of

the Periodic Table or a compound containing at least one of these elements, and palladium, wherein the outflow ratio of the compound containing alkali metal and/or alkaline earth metal is from 1.0 + 10⁻⁵ to 0.01/h.
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 5 OF 52 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:386490 CAPLUS
DOCUMENT NUMBER: 138:386492
TITLE: Multilayer packaging films having superior transparency and gas-barrier property for medicines
INVENTOR(S): Yamazaki, Masami; Iwamori, Akira; Kagami, Mamoru; Kajiwara, Takayuki; Kawachi, Shuji
PATENT ASSIGNEE(S): Mitsui Chemicals Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
PATENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO. KIND DATE APPLICATION NO. DATE
JP 2003145664 A2 20030520 JP 2001-350648 20011115
JP 2001-350648 20011115
AB The films have, on one or both sides of support plastic films, sequential layers of inorg. layers satisfying [Al] 5-80, [Si] 0.5-55, [O] 2-64, and [N] 0.5-56 atomic% (above total 30-100 atomic%), adhesive layers of unsatd. carboxylic acid (derivative)-modified polyolefins, and optional protective films. The films may satisfy light transmittance ≥55% and b value ≤5. Thus, 12-μm-thick PET film was coated with 50-nm deposition layer of Si 8%, Al 39, N 10, O 32, and C 11%, laminated with 20-μm-thick maleated polyethylene (PE) layer and then with 100-μm-thick PE film to give a gas-barrier film showing interlayer 90° peeling strength ≥60 g/15 mm after 40-min steam sterilization, 0 permeability 0.3 mL/m²/day at 1.7 atm, light transmittance 83%, and b value 1.7.

L5 ANSWER 6 OF 52 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:333092 CAPLUS
DOCUMENT NUMBER: 138:304690
TITLE: High activity silica gel carrier catalyst composition for ethylene polymerization or copolymerization
INVENTOR(S): Luo, Hekuan; Tang, Ruiguo; Gao, Kejing; Zhao, Qinfang; An, Jingyan; Yang, Hua; Huo, Jinheng
PATENT ASSIGNEE(S): China Petrochemical Corp., Peop. Rep. China; Beijing Research Institute of Chemical Industry, SINOPEC
SOURCE: Faming Zhuanli Shengqing Gongkai Shuomingshu, 16 pp.
CODEN: CNXXEV
PATENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO. KIND DATE APPLICATION NO. DATE
CN 1339509 A 20020313 CN 2000-123560 20000822
WO 2002026838 A1 20020404 WO 2001-CN1264 20010822
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MW, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ,

VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GN, KE, LS, MM, MZ, SL, SZ, TZ, UG, ZM, AT, BE, CH, CY,
DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MG, NL, PT, SE, TR, BF,
BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
AU 2002013766 A5 20020408 AU 2002-13766 20010822
US 2002065378 A1 20020530 US 2001-93533 20010822
US 6642325 B2 20031104 CN 2000-123560 A 20000822
PRIORITY APPLN. INFO.: WO 2001-CN1264 W 20010822
OTHER SOURCE(S): MARPAT 138:304690
AB The catalyst component contains a Ti-containing active component carried on a porous inert carrier, where the Ti-containing active component is a reaction product of at least one type of Ti compound (such as TiCl₄) with at least one type of Mg compound (such as MgCl₂) and at least one type of electron donor compound (such as Et acetate) in a molar ratio of 1:0.5-50:0.5-50, and may also contain at least one type of halide modifier (such as Cl₃CCl₂OH) (at a molar ratio of Ti compound/halide modifier = 1:0.5-50), and the porous inert carrier is spherical or spherical-like silica gel having average particle size 10-100 μm and sp. surface area 300-1000 m²/g. The catalyst component is combined with an alkyl aluminum compound (such as tri-Et aluminum) and used in gaseous or slurry polymerization or copolymerization of ethylene, and especially used in preparing high-quality LLDPE resin by gaseous fluidized bed condensation technique.

L5 ANSWER 7 OF 52 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:736941 CAPLUS
DOCUMENT NUMBER: 137:249510
TITLE: Preparation of a saturated carboxylic acid ester and use of water-soluble palladium complex
INVENTOR(S): Seavard, Jayasree; Seavard, Abdul Majeed; Sarkar, Bibhas Ranjan; Chaudhari, Raghunath Vitthal
PATENT ASSIGNEE(S): Council of Scientific & Industrial Research, India
SOURCE: U.S. Pat. Appl. Publ., 9 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO. KIND DATE APPLICATION NO. DATE
US 2002137964 A1 20020926 US 2001-813086 20010320
US 6479693 B2 20021112 US 2001-813086 20010320
PRIORITY APPLN. INFO.: MARPAT 137:249510
OTHER SOURCE(S):
AB A carboxylic acid ester R₃R₄SCC(R₁R₂)CO₂R (I) is prepared, where R = alkyl or aryl, R₁ = aryl, substituted aryl, naphthyl or substituted naphthyl or alkyl, R₂-5 = H or alkyl, by reacting an olefin R₃R₄SCC(R₁R₂) (R₁ = aryl, substituted aryl, naphthyl or substituted naphthyl or alkyl, R₂-4 = H or alkyl), in the presence of an alc. and an organic solvent and a supported aqueous phase Pd complex catalyst, and in presence or absence of a protonic acid and an alkali metal halide, under CO atmospheric, cooling the reaction mixture to ambient temperature, depressurizing the reactor, flushing the reaction vessel with inert gas, separating the catalyst by filtration, and removing the solvent and isolating I. Thus, styrene (0.144 mol), MeOH, cyclohexane, and Pd(TPPTS)₃ [TPPTS = tris(sodium 3-sulfonatophenyl)phosphine] was heated to 75°, pressurized to 500 psig with CO, and stirred 12 h to give a mixture of 2- and 3-methylphenyl propionates, selectivity 54.26% and 45.73%, resp.

L5 ANSWER 8 OF 52 CAPLUS COPYRIGHT 2006 ACS on STN

2002:637632 CAPLUS
137:171395
Process for the use of and supports for the manufacture of catalysts for producing lower aliphatic carboxylic acid esters via the addition-esterification reaction of lower aliphatic carboxylic acids with lower alkenes
Kadowaki, Etsuko; Narumi, Kousuke; Uchida, Hiroshi
Showa Denko K. K., Japan
PCT Int. Appl., 45 pp.
CODEN: PIXXD2
INVENTOR(S):
PATENT ASSIGNEE(S):
SOURCE: PATENT INFORMATION:
DOCUMENT TYPE: English
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO. KIND DATE APPLICATION NO. DATE
WO 2002064541 A1 20020822 WO 2002-JP1156 20020212
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, GR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY, NZ, OM, PA, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, BG, KZ, MD, RU, TJ, TM, RW: GH, GM, KE, LS, MM, MZ, SD, SL, SZ, TZ, UG, ZM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
JP 2002316048 A2 20021029 JP 2001-373675 20011207
EP 1360166 A1 20031112 EP 2002-711471 20020212
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
BR 2002007225 A 20040309 BR 2002-7225 20020212
CN 1491204 A 20040421 CN 2002-804859 20020212
US 2003118497 A1 20030626 US 2002-70259 20020304
ZA 2003005143 A 20040312 ZA 2003-5143 20030702
US 2004242918 A1 20041202 US 2004-785229 20040225
PRIORITY APPLN. INFO.: JP 2001-373675 A 20010306
JP 2001-373675 A 20011207
JP 2000-192964 A 20000627
JP 2000-218803P A 20000718
WO 2001-JP5532 P 20010627
US 2001-889354 B2 20010717
WO 2002-JP1156 W 20020212
US 2002-70259 B2 20020304

AB A siliceous support for use in a catalyst for producing a lower aliphatic carboxylic acid esters (e.g., Et acetate) by the esterification-addition reaction of a lower olefin (e.g., ethylene) with a lower aliphatic carboxylic acid (e.g., acetic acid) in the gas phase is described and the support has a silicon content of 39.7-46.3% by mass or a silicon content of from 85-99% by mass in terms of silicon dioxide or a crush strength of 230 N; the catalyst is a heteropoly acid or salt on the support. By the use of a catalyst comprising the support, a lower aliphatic carboxylic acid ester is produced from a lower olefin and a lower aliphatic carboxylic acid without causing a great reduction of catalytic activity or cracking or abrasion of the catalyst.

REFERENCE COUNT: 4
THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
L5 ANSWER 9 OF 52 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:881210 CAPLUS
DOCUMENT NUMBER: 134:42585

TITLE:

Process for producing ethylene-olefin
interpolymers

INVENTOR(S): Ford, Randal Ray; Vanderbilt, Jeffrey James; Williams,

Darryl Stephen

PATENT ASSIGNEE(S): Eastman Chemical Co., USA

SOURCE: FCI Int. Appl., 64 pp.

CODEN: F1XXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

PATENT INFORMATION:

FAMILY ACC. NUM. COUNT: 1

PATENT NO.

WO 2000075202

KIND

A1

DATE

20001214

APPLICATION NO.

WO 1999-US22957

DATE

19991014

W: BR, CA, CN, JP, MX

R: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,

PT, SE

US 6417301

B1

20020709

US 1999-386545

19990831

CA 2375621

A1

20001214

BR 9917354

A

20020226

BR 9917354

19991014

EP 1183284

A1

20020306

EP 1999-951735

19991014

EP 1183284

B1

20050427

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, NL, SE, MC, PT,

JP 200301526

T2

20030114

JP 2001-502482

19991014

US 1999-137979P

P

19990607

US 1999-386545

A

19990831

WO 1999-US22957

W

19991014

AB

The process uses Ziegler-Natta catalysts for producing ethylene-

olefin interpolymers having a given melt index and d. and a

reduced melting peak temperature (Tm). The process involves contacting

ethylene

and 21 other olefin under polymerization conditions with a

Ziegler-Natta catalyst and 21 modifier comprising 21 element

from Group 15 and/or Group 16 in amts. sufficient to reduce the melting

peak temperature of the interpolymers.

THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS

REFERENCE COUNT: 5

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 10 OF 52 CAPLUS COPYRIGHT 2006 ACS ON STN

ACCESSION NUMBER:

131118312

DOCUMENT NUMBER:

131118312

TITLE:

Attrition resistant catalysts and sorbents based on

heavy metal poisoned FCC catalysts

Gangwal, Santosh; Jothimurugesan, Kandaswamy

Research Triangle Institute, USA

U.S., 9 pp.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.

US 5928980

KIND

A

DATE

19990727

APPLICATION NO.

US 1997-795669

DATE

19970206

US 1997-795669

19970206

PRIORITY APPL. INFO.:

AB

A heavy metal poisoned, spent FCC catalyst is treated by chemical

impregnating the poisoned catalyst with a new catalytic metal or metal

salt to provide an attrition resistant catalyst or sorbent for a different

catalytic or absorption processes, such as catalysts for Fischer-Tropsch

synthesis, and sorbents for removal of sulfur gases from fuel

gases and flue gases. The heavy metal contaminated FCC

catalyst is directly used as a support for preparing catalysts

TITLE:

Process for producing ethylene-olefin
interpolymers

INVENTOR(S): Ford, Randal Ray; Vanderbilt, Jeffrey James; Williams,

Darryl Stephen

PATENT ASSIGNEE(S): Eastman Chemical Co., USA

SOURCE: FCI Int. Appl., 64 pp.

CODEN: F1XXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

PATENT INFORMATION:

FAMILY ACC. NUM. COUNT: 1

PATENT NO.

WO 2000075202

KIND

A1

DATE

20001214

APPLICATION NO.

WO 1999-US22957

DATE

19991014

W: BR, CA, CN, JP, MX

R: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,

PT, SE

US 6417301

B1

20020709

US 1999-386545

19990831

CA 2375621

A1

20001214

BR 9917354

A

20020226

BR 9917354

19991014

EP 1183284

A1

20020306

EP 1999-951735

19991014

EP 1183284

B1

20050427

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, NL, SE, MC, PT,

JP 200301526

T2

20030114

JP 2001-502482

19991014

US 1999-137979P

P

19990607

US 1999-386545

A

19990831

WO 1999-US22957

W

19991014

AB

The process uses Ziegler-Natta catalysts for producing ethylene-

olefin interpolymers having a given melt index and d. and a

reduced melting peak temperature (Tm). The process involves contacting

ethylene

and 21 other olefin under polymerization conditions with a

Ziegler-Natta catalyst and 21 modifier comprising 21 element

from Group 15 and/or Group 16 in amts. sufficient to reduce the melting

peak temperature of the interpolymers.

THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS

REFERENCE COUNT: 5

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 10 OF 52 CAPLUS COPYRIGHT 2006 ACS ON STN

ACCESSION NUMBER:

131118312

DOCUMENT NUMBER:

131118312

TITLE:

Attrition resistant catalysts and sorbents based on

heavy metal poisoned FCC catalysts

Gangwal, Santosh; Jothimurugesan, Kandaswamy

Research Triangle Institute, USA

U.S., 9 pp.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.

US 5928980

KIND

A

DATE

19990727

APPLICATION NO.

US 1997-795669

DATE

19970206

US 1997-795669

19970206

PRIORITY APPL. INFO.:

AB

A heavy metal poisoned, spent FCC catalyst is treated by chemical

impregnating the poisoned catalyst with a new catalytic metal or metal

salt to provide an attrition resistant catalyst or sorbent for a different

catalytic or absorption processes, such as catalysts for Fischer-Tropsch

synthesis, and sorbents for removal of sulfur gases from fuel

gases and flue gases. The heavy metal contaminated FCC

catalyst is directly used as a support for preparing catalysts

TITLE:

Process for producing ethylene-olefin
interpolymers

INVENTOR(S): Ford, Randal Ray; Vanderbilt, Jeffrey James; Williams,

Darryl Stephen

PATENT ASSIGNEE(S): Eastman Chemical Co., USA

SOURCE: FCI Int. Appl., 64 pp.

CODEN: F1XXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

PATENT INFORMATION:

FAMILY ACC. NUM. COUNT: 1

PATENT NO.

WO 2000075202

KIND

A1

DATE

20001214

APPLICATION NO.

WO 1999-US22957

DATE

19991014

W: BR, CA, CN, JP, MX

R: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,

PT, SE

US 6417301

B1

20020709

US 1999-386545

19990831

CA 2375621

A1

20001214

BR 9917354

A

20020226

BR 9917354

19991014

EP 1183284

A1

20020306

EP 1999-951735

19991014

EP 1183284

B1

20050427

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, NL, SE, MC, PT,

JP 200301526

T2

20030114

JP 2001-502482

19991014

US 1999-137979P

P

19990607

US 1999-386545

A

19990831

WO 1999-US22957

W

19991014

AB

The process uses Ziegler-Natta catalysts for producing ethylene-

olefin interpolymers having a given melt index and d. and a

reduced melting peak temperature (Tm). The process involves contacting

ethylene

and 21 other olefin under polymerization conditions with a

Ziegler-Natta catalyst and 21 modifier comprising 21 element

from Group 15 and/or Group 16 in amts. sufficient to reduce the melting

peak temperature of the interpolymers.

THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS

REFERENCE COUNT: 5

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 10 OF 52 CAPLUS COPYRIGHT 2006 ACS ON STN

ACCESSION NUMBER:

131118312

DOCUMENT NUMBER:

131118312

TITLE:

Attrition resistant catalysts and sorbents based on

heavy metal poisoned FCC catalysts

Gangwal, Santosh; Jothimurugesan, Kandaswamy

Research Triangle Institute, USA

U.S., 9 pp.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.

US 5928980

KIND

A

DATE

19990727

APPLICATION NO.

US 1997-795669

DATE

19970206

US 1997-795669

19970206

PRIORITY APPL. INFO.:

AB

A heavy metal poisoned, spent FCC catalyst is treated by chemical

impregnating the poisoned catalyst with a new catalytic metal or metal

salt to provide an attrition resistant catalyst or sorbent for a different

catalytic or absorption processes, such as catalysts for Fischer-Tropsch

synthesis, and sorbents for removal of sulfur gases from fuel

gases and flue gases. The heavy metal contaminated FCC

catalyst is directly used as a support for preparing catalysts

TITLE:

Process for producing ethylene-olefin
interpolymers

INVENTOR(S): Ford, Randal Ray; Vanderbilt

US 5347046 A 19940913 US 1993-67445 19930525
CA 2161952 AA 19941208 CA 1994-2161952 19940511
WO 9427720 CN 19941208 WO 1994-US5382 19940511
W: AU, BR, CA, CN, JP, KR, RU
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE
AU 9469129 AU 19941220 AU 1994-69129 19940511
BR 9406696 A 19960319 BR 1994-6696 19940511
EP 708684 A 19960501 EP 1994-917387 19940511
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE
CN 123527 A 19960529 CN 1994-192124 19940511
JP 08510685 T2 19961112 JP 1995-500722 19940511
JP 3698322 B2 20050921
PRIORITY APPLN. INFO.:
US 1993-67445 A 19930525
WO 1994-US5382 W 19940511
AB Title catalysts comprise (i) ≥ 1 palladium group metals and/or
comps. thereof; (ii) gold and/or comps. thereof; and (iii) optionally,
 ≥ 1 promoters selected from Cu, Ni, Co, Fe, Mn, Pb, Ag and their
comps. Preferably these catalyst comps. contain ≥ 1 promoters
wherein the gram ratio of metal in the promoter to palladium group metal
is ≤ 0.4 , and the catalysts are deposited on a support
material treated with ≥ 1 alkali metal bases and ≥ 1 alkali
metal silicates prior to deposition. In some cases, the catalysts are
further impregnated with ≥ 1 alkali or alkaline-earth carboxylates as
promoters and activators. Ethylenically unsatd. esters are
prepared with improved activity and selectivity by reacting in the
vapor phase ≥ 1 olefinic comps. with ≥ 1
carboxylic acid and mol. oxygen in the presence of the foregoing
catalyst comps. Thus, vapor-phase reaction of ethylene at
140° with HOAC and O over silica beads that were pretreated with
KOH and K silicate solution at 16.2 and 127.2 g/L beads, resp., and
impregnated with Na2PdCl4, NaAuCl4, CuCl2, and KOAc to contain 4.1, 1.8,
6.3, and 22 g/L catalyst of Pd, Au, Cu, and KOAc, resp., gave vinyl
acetate at space-time yield 158.3 (95% selectivity) and selectivity 96.3%
(12% space-time yield).

L5 ANSWER 13 OF 52 CAPLUS COPYRIGHT 2006 ACS ON STN
ACCESSION NUMBER: 1994:656552 CAPLUS
DOCUMENT NUMBER: 121:256552
TITLE: Components and catalysts for the polymerization of
olefins.
INVENTOR(S): Sacchetti, Mario; Cuffiani, Illaro; Pennini, Gianni
PATENT ASSIGNEE(S): Spherilene S.r.l., Italy
SOURCE: Eur. Pat. Appl., 15 Pp.
CODEN: EPAXDM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 601525	A1	19940615	EP 1993-119646	19931206
EP 601525	B1	19990210		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, NL, PT, SE				
IN 181561	A	19980711	IN 1993-CA721	19931124
AT 176676	E	19990215	AT 1993-119646	19931206
ES 2129063	T3	19990601	ES 1993-119646	19931206
AU 9352295	A1	19940623	AU 1993-52295	19931208
AU 673551	B2	19961114		
ZA 9309210	A	19940808	ZA 1993-9210	19931208
JP 0730507	A2	19951114	JP 1993-308020	19931208
RU 216420	C1	19990210	RU 1993-54328	19931208
NO 9304496	A	19940613	NO 1993-4496	19931209
IL 107958	A1	19980924	IL 1993-107958	19931209

FI 9305550 A 19940612 FI 1993-5550 19931210
B1 20031114
BR 9305019 A 19940705 BR 1993-5019 19931210
CN 1089622 A 19940720 CN 1993-112859 19931211
CN 1034580 B 19970415
CA 2111308 AA 19940612 CA 1993-2111308 19931213
CN 1127262 A 19960724 CN 1995-115159 19950918
CN 1041525 B 19990106
US 2001011060 A1 20010802 US 1997-878681 19970619
US 6388028 B2 20020514
PRIORITY APPLN. INFO.:
IT 1992-MI2822 A 19921211
US 1993-163571 B1 19931208
US 1996-741580 B1 19961101
AB The present invention relates to spherical solid catalyst components for
the polymerization of olefins, comprising a titanium compound,
supported on a magnesium halide, containing more than one Ti-halogen
link and optionally containing groups different from halogen in an amount lower
than 0.5 mol per mol of Ti. Spherical solid comps. of the invention are
characterized by having a surface area, measured by the BET method, of
lower than 70 m²/g, a total porosity, measured by the mercury method,
higher than 0.5 cm³/g and a pore radius such that at least 50% have values
higher than 800 Å. The polyolefins prepared by vapor
-phase-polymerization in the presence of these catalysts have spheroidal
particles with high bulk d. Thus, vapor-phase-polymerization of
ethylene in the presence of (iso-Bu)3Al and spheres with overall Ti
content 6%, Ti3+ content 4.9, Al content 3%, Mg content 12.2%, Cl content
68.2%, OEt content 0.3%, BET porosity 0.208 cm³/g (of which 50% was due to
pores with radius >300 Å), BET surface area 56.2 m²/g, mercury total
porosity 0.674 cm³/g (of which 50% was due to pores with radius >1250
Å, 91% of the pores have a radius of $\leq 15,000$ Å) and
mercurium surface area 21 m²/g at 75° gave polymer powder having
spheroidal particles with bulk d. 0.32 g/cm³.

L5 ANSWER 14 OF 52 CAPLUS COPYRIGHT 2006 ACS ON STN
ACCESSION NUMBER: 1994:322766 CAPLUS
DOCUMENT NUMBER: 120:322766
TITLE: Preparation of unsaturated carboxylic acid
esters with palladium catalysts
INVENTOR(S): Harada, Hirobumi; Hamachi, Hideyuki; Nishizuka,
Masaya; Kato, Takao; Saito, Toshihiro
PATENT ASSIGNEE(S): Tosoh Corp, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXJAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06025082	A2	19940201	JP 1992-200102	19920706
PRIORITY APPLN. INFO.: CASREACT 120:322766			JP 1992-200102	19920706
OTHER SOURCE(S):				
AB Unstd. carboxylic acid esters are prepared by reaction of olefins, O, and AcOH in gas phases in presence of Pd catalysts prepared by ion exchange of OH on the surfaces of catalyst supports with Pd amine complexes, optional calcination under O-containing gases, reduction of the supports, and supporting alkali metal acetates on the supports. Silica was impregnated with an aqueous NH3 solution of (Pd(NH3)4Cl2), dried at 110° for 3 h, heated at 400° for 5 h, reduced by H ₂ at 300° for 5 h, impregnated with aqueous AcOH, and dried at 110° for 3 h to prepare a Pd- and AcOH-containing catalyst. A 50:9:7:33 mixture of propylene, O, AcOH, and N was passed through the catalyst at 150°, 5 atm, and 13.6 NL/h to give 307 g/L/h allyl acetate with 95.8%				

selectivity.

L5 ANSWER 15 OF 52 CAPLUS COPYRIGHT 2006 ACS ON STN
ACCESSION NUMBER: 1994:191137 CAPLUS
DOCUMENT NUMBER: 120:191137
TITLE: Preparation of lower fatty acid **esters**
INVENTOR(S): Suzuki, Toshio; Takahashi, Shunel; Sano, Kenichi
PATENT ASSIGNEE(S): Showa Denko KK, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKKXAF

DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 05294894	A2	19931109	JP 1992-101364	19920421
JP 2850636	B2	19990127		
IN 189050	A	20021214	IN 2000-DE957	20001025
			JP 1992-101364	A 19920421

PRIORITY APPLN. INFO.: CASREACT 120:191137
OTHER SOURCE(S):
AB The title compds. are prepared by **gas-phase esterification** of lower fatty acids with lower **olefins** using **supported** catalysts of heteropoly acid salts of Li, Cu, Mg, and/or Ca. A reactor containing Li phosphotungstate **supported** on SiO₂ (preparation given) was fed with mixed **gases** containing AcOH and CH₂:CH₂ at 150° and 5 kg/cm²-gase to give 91.8% Et acetate.

L5 ANSWER 16 OF 52 CAPLUS COPYRIGHT 2006 ACS ON STN
ACCESSION NUMBER: 1992:433032 CAPLUS
DOCUMENT NUMBER: 117:33032
TITLE: Steam stripping for removal of organic pollutants from water. 2. **Vapor-liquid** equilibrium data
Hwang, Ying Long; Olson, James D.; Keller, George E., II

CORPORATE SOURCE: Union Carbide Chem. and Plast. Co. Inc., South Charleston, WV, 25303, USA
SOURCE: Industrial & Engineering Chemistry Research (1992), 31(7), 1759-68
CODEN: IECRED; ISSN: 0888-5885

DOCUMENT TYPE: Journal
LANGUAGE: English
AB In **support** of the simple tools for steam stripping presented in part 1, the estimation of the infinite-dilution **vapor-liquid** equilibrium consts. (K_w) for organic pollutants in dilute aqueous solns are discussed. A databank of K_w at 1 atm and 100° as well as at 25° was established for a number of common organic pollutants. In addition, a correlation

of K_w with mol. structure was formulated. The concept that the effectiveness of stripping an organic pollutant from water is mainly determined by its hydrophobicity (indicated by its low aqueous solubility) rather than by its pure-component volatility is also clarified. On the basis of the guideline proposed in part 1, the estimated K_w values reveal that steam stripping is effective in removing hydrophobic (sparingly soluble) pollutants such as paraffins, **olefins**, aroms., halogenated hydrocarbons, and compds. with dominant hydrocarbon segments.

L5 ANSWER 17 OF 52 CAPLUS COPYRIGHT 2006 ACS ON STN
ACCESSION NUMBER: 1992:237786 CAPLUS
DOCUMENT NUMBER: 116:237786
TITLE: Hollow cylindrical **carrier** as catalyst **support** for production of unsaturated **esters**

INVENTOR(S):
PATENT ASSIGNEE(S):
SOURCE: Eur. Pat. Appl., 16 pp.
CODEN: EPXXDM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 464633	A1	19920108	EP 1991-110562	19910626
EP 464633	B1	19940119		
JP 04227069	R: BE, DE, FR, GB, IT	19920817		
US 5371277	A	19941206		

PRIORITY APPLN. INFO.:
AB Production of unsatd. **esters** with high catalyst activity and low pressure drop in the catalyst layer is achieved by **gas-phase** reaction of **olefin**, **carboxylic acid**, and O in the presence of a catalyst (e.g. Pd) **supported** on a hollow cylindrical **carrier** having λ through channel. A **gas** containing C₂H₄ 72, O 8, and AcOH 20 volu% was passed through a catalyst layer (containing Pd 5.0, Au 0.5, and KOAc 20 g/L on a hollow cylindrical silica) at 160° and 2000 h-1 giving vinyl acetate with selectivity 94% and pressure drop 0.20 kg/cm², vs. 95 and 0.26 resp., when using a spherical silica **support**.

L5 ANSWER 18 OF 52 CAPLUS COPYRIGHT 2006 ACS ON STN
ACCESSION NUMBER: 1992:227394 CAPLUS
DOCUMENT NUMBER: 116:227394
TITLE: Chromatographic method for analysis of aliphatic **olefin** alcohols, acetates and ketones

INVENTOR(S): Nesterova, I. P.; Rastegaeva, V. M.
PATENT ASSIGNEE(S): All-Union Scientific-Research Institute of Biological Methods of Plant Protection, USSR
SOURCE: U.S.S.R. From: Otkrytiya, Izobret. 1991, (31), 182.

DOCUMENT TYPE: Patent
LANGUAGE: Russian
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
SU 1672352	A1	19910823	SU 1988-4445933	19880513
			SU 1988-4445933	19880513

PRIORITY APPLN. INFO.:
AB The mixture is separated in a capillary column with a stationary phase in a **carrier-gas** flow with subsequent detection of separated **isomers**. To increase separation selectivity and expand the circle of sample substances - among them insect sex attractants, liquid-crystal cholesteryl-p-methoxybenzoate is used as the stationary phase, and the separation is performed at 170-190° for a **carrier-gas** rate in the column over the interval of 6.0-15.0 cm/s.

L5 ANSWER 19 OF 52 CAPLUS COPYRIGHT 2006 ACS ON STN
ACCESSION NUMBER: 1992:173577 CAPLUS
DOCUMENT NUMBER: 116:173577
TITLE: Preparation of catalysts for unsaturated **ester**

INVENTOR(S):
PATENT ASSIGNEE(S):
Kumai, Toshi; Takagi, Isato; Morofuji, Masamitsu; Fujiwara, Hideatsu; Yoshida, Soichi
Tosoh Corp., Japan; Japan Synthetic Rubber Co., Ltd.

SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKKXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO. APPLICATION NO. DATE
JP 03275141 1990-07211 19900327
JP 03275141 1990-07211 19900327
PRIORITY APPL. INFO.:
OTHER SOURCE(S): CASREACT 116:173577
AB Pd catalysts for preparation of unsatd. diesters from olefins, carboxylic acids, and O are prepared by treating metal compds. and supports in aqueous tartaric acid containing 0.1-10% hydrogen halides and subsequent reduction. A mixture of PdCl₂ 13.4, Sb₂O₃ 21.9, and NH₄VO₃ 8.8 g was dissolved in an aqueous solution containing 25% tartaric acid and 2.5% HCl, then 150

g silica gel was stirred in the solution, dried, calcined at 400° for 20 h, and reduced in H at 200° for 2 h and at 400° for 2 h. The solid was then impregnated in an aqueous solution containing 24 g CsCl and 24 g CsOAc and dried to give a Pd catalyst. A mixed gas of butadiene, AcOH, O₂, and N₂ (20/20/12/48) was treated in the presence of the catalyst at 185° for 100 h to give 95.3% diacetylbucene containing 95.1% 1,4-isomer.

L5 ANSWER 20 OF 52 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1991:494244 CAPLUS
DOCUMENT NUMBER: 115:94244
TITLE: Preparation and uses Ziegler-Natta polymerization catalysts
INVENTOR(S): Baillly, Jean Claude Andre; Behue, Patrick
PATENT ASSIGNEE(S): BP Chemicals Ltd., UK; BP Chemicals SNC
SOURCE: Eur. Pat. Appl., 11 pp.
CODEN: EPXDXM

DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO. APPLICATION NO. DATE
EP 437080 19910717 EP 1990-314081 19901220
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE
FR 2656615 19910705 FR 1990-191 19900104
US 5106805 19920421 AU 1990-68355 19901217
AU 9068355 19910711 AU 1990-2033028 19901221
CA 2033028 19910705 CA 1990-5634 19901228
NO 9005634 19920210 JP 1990-408659 19901228
JP 04039309 19910705 FI 1991-20 19910102
FI 9100020 19920629 HU 1991-17 19910103
HU 59702 19910724 CN 1991-100033 19910104
CN 1053243 19911022 BR 1991-19 19910104
BR 9100019 19911022 FR 1990-191 19900104

PRIORITY APPL. INFO.:
AB Ziegler-Natta catalysts, useful for the polymerization of olefins and the manufacture of elastomers, are prepared by contacting within a liquid hydrocarbon as spherical support comprising MgCl₂ and an electron donor compound free of labile H, successively with an electron donor compound containing labile H, and then with an organometallic compound capable of reducing V and Ti compds., washing the solid product with a liquid hydrocarbon, and then contacting the washed solid product with a hydrocarbon-soluble V and Ta compds. Thus, spherical particles of MgCl₂

support (prepared by reacting Bu₂Mg with tert BuCl and diisooxymyl ether) in C₆H₁₄ was heated with C₆H₁₄ containing BuOH, decanted, and then successively contacted with Et₃Al, VOCl₃ and TiCl₄ to give as spherical catalyst having the following molar ratio: V/Mg = 0.15, Ti/Mg = 0.04, Al/Mg = 0.15, and Cl/Mg = 2.6. The catalyst was used for the gas -phase copolym. of ethylene and propylene.

L5 ANSWER 21 OF 52 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1991:187321 CAPLUS
DOCUMENT NUMBER: 114:187321
TITLE: Preparation of elastomeric propylene copolymers by gas-phase polymerization in presence of Ziegler-Natta catalysts
INVENTOR(S): Baillly, Jean Claude Andre; Bordere, Louis
PATENT ASSIGNEE(S): BP Chemicals Ltd., UK
SOURCE: Eur. Pat. Appl., 14 pp.
CODEN: EPXDXM

DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO. APPLICATION NO. DATE
EP 415588 19910306 EP 1990-308836 19900810
EP 415588 19910306 EP 1990-308836 19900810
R: AT, BE, CH, DE, DK, ES, GB, GR, IT, LI, LU, NL, SE
FR 2651234 19910301 FR 1989-11523 19890829
FR 2651234 19910301 FR 1989-11523 19890829
AT 100475 E 19940215 AT 1990-308836 19900810
ES 2062387 T3 19941216 ES 1990-308836 19900810
IN 179795 A 19971213 IN 1990-DE820 19900816
CA 2023653 AA 19910301 CA 1990-2023653 19900820
AU 9061330 A1 19910307 AU 1990-61330 19900824
AU 622573 B2 19920409 DD 1990-343664 19900827
DD 298936 A5 19920319 NO 1990-3763 19900828
NO 9003763 A 19910301 NO 1990-3763 19900828
NO 175263 B 19940613
HU 54715 A2 19910328 HU 1990-5509 19900828
JP 03093803 A2 19910418 JP 1990-224507 19900828
BR 9004245 A 19910903 BR 1990-4245 19900828
CN 1050199 A 19910327 CN 1990-107047 19900829
FR 1989-11523 A 19890828
EP 1990-308836 A 19900810

PRIORITY APPL. INFO.:
AB Elastomeric copolymers of 20-80% propylene (I) with 80-20% ethylene (II) and/or 1-butene (III) and optionally, ≥1 C₅-12 α-olefins are prepared by a 2-stage procedure, prepolymerizing in the first stage I, optionally mixed with II and/or C₄-12-α olefin, in the presence of a Ziegler-Natta catalyst and a cocatalyst consisting of a trialkylaluminum and/or in alkyl aluminum halide not complexed with an external electron donor compound, followed by a gas-phase copolym. of the prepolymer with a mixture of I, II, and/or III and optionally a C₅-12-α olefin in a proportion so that I represents 20-80 vol% of the copolymerizable olefins. The Ziegler-Natta catalyst is prepared by contacting MgCl₂ support with an internal electron donor compound, e.g., aromatic carboxylic acid esters, and then with TiCl₄, provided the support is initially preactivated by the different organic electron donor compound which is free from labile H, and provided the support consists of 80-99.5 mol% MgCl₂ and 0.5-20 mol% electron donor compound. Thus, a preactivated support comprises MgCl₂ in hexane (IV) was successively stirred with BuOH, PhCO₂Et, and TiCl₄, with intermediate decanting, washing, and resuspension in IV to give a particulate catalyst containing 6.5% Ti atoms per Mg atom and having a specific particle

size distribution. I was then prepolymerized in the presence of the catalyst and Et₂AlCl in IV to give a prepolymer suspension in IV. The prepolymer was then copolymerized in a fluidized bed reactor with I and II in the presence of anhydrous II-I copolymer and (iso-Bu)₃Al to give an agglomerated II-I copolymer containing 63% II and having a bulk d. 0.45 g/cm³.

L5 ANSWER 22 OF 52 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1985:423053 CAPLUS
DOCUMENT NUMBER: 10323053

TITLE: Deodorization of polyolefins
Ube Industries, Ltd., Japan
Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKKXAF

INVENTOR(S): Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 60038408	A2	19850228	JP 1983-146694	19830812
JP 04036164	B4	19920615		

PRIORITY APPLN. INFO.:

AB Polyolefins prepared by polymerizing C₃ α-olefins in the presence of a solid catalyst component containing Mg, halogen, and Ti, an organoaluminum compound, and an aromatic carboxylic acid ester were deodorized by contacting with C₃ α-olefin vapor. Thus, 15 mmol suspended in 30 mL toluene was treated over 30 min with a solution of 15 mmol MeSi(OEt)₃ in 10 mL toluene at room temperature, heated at 60° for 1 h, cooled to -10°, treated over 30 min with a solution of 27 mmol BuMgCl in diisopropyl ether, and heated at 30° for 1 h to obtain a carrier. The carrier was then suspended in 30 mL toluene heated with 150 mmol TiCl₄ at 90° for 1 h, and filtered hot to obtain a solid product which was then suspended in toluene heated with 150 mmol TiCl₄ at 90° for 1 h, and filtered hot to obtain a solid catalyst component (I) with Ti content 2.8%. A heptane suspension of 16 mg I, 0.24 mmol Me₂OC₆H₄Me-p in 10 mL heptane, and 0.94 mmol Et₃Al in 4 mL heptane were mixed and autoclaved with 1200 mL liquid propylene at 65° for 1 h to obtain 250 g powdered polypropylene [9003-07-0] with boiling heptane-insol. content 94.5%. The polymer (200 g) fluidized with N was contacted with 120 g/h 2-propanol [67-63-0] vapor at 110° for 30 min to obtain substantial deodorization.

L5 ANSWER 23 OF 52 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1980:41339 CAPLUS
DOCUMENT NUMBER: 92:41339

TITLE: Supported catalyst for producing unsaturated

esters from C₃-C₁₀ olefins, carboxylic acids, and oxygen in the gas phase

INVENTOR(S): Wunder, Friedrich A.; Quadflieg, Therese; Roscher, Guenter; Heck, Guenter
PATENT ASSIGNEE(S): Hoechst A.-G.; Fed. Rep. Ger.
SOURCE: Ger. Offen., 19 pp.
CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2811211	A1	19790927	DE 1978-2811211	19780315

PRIORITY APPLN. INFO.:

AB The efficiency of catalysts for the title reaction was improved by using catalyst supports consisting of particles with star-shaped cross-sections or ribbed particles (vs. pellets or Raschig rings). Thus, 1377 g SiO₂ particles (5-pointed star cross-section), point ht. 1.7 mm, diameter 6 mm, bulk d. 0.27 kg/L were treated with 63 g Pd(OAc)₂, 63 g KOAc, and 50 g Bi(OAc)₃ in 1093 mL HOAc and 13 g Ba aurate and 84 g H₂O in 393 mL HOAc and the catalyst was dried at 60/270 mbar under N. The catalyst gave 963 g/L h conversion of propene and HOAc to allyl acetate and 648 g/L h conversion of isobutene and HOAc to methylallyl acetate. Data for runs with 4 conventional supports were also given.

L5 ANSWER 24 OF 52 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1978:406804 CAPLUS

DOCUMENT NUMBER: 89:6804

TITLE: Unsaturated esters

INVENTOR(S): Klass, Donald L.

PATENT ASSIGNEE(S): Union Oil Co., USA

SOURCE: U.S., 6 pp.
CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4057375	A	19771108	US 1976-699198	19760623
US 4161610	A	19790717	US 1961-141832	19610929
			US 1961-141832	A2 19610929
			US 1967-670159	A1 19670925

PRIORITY APPLN. INFO.:

AB Olefins are oxidized to unsatd. esters of organic acids or acetals and/or) unsatd. ethers of alcs. by contacting the olefin with an organic acid or alc. reactant in the presence of a catalyst comprising a compound of a group VIII noble metal and a redox agent; the catalyst is kept active by contacting it with O. Thus, C₂H₄ [74-85-1] vapor was passed through liquid HOAc [64-19-7] to vaporize some of the HOAc and the resulting mixture was passed through a catalyst bed consisting of PdCl₂, HCl, and CuCl₂ supported on silica. Vinyl acetate [108-05-4] was removed as product from the effluent gas stream, and the unreacted C₂H₄ was recycled to the reactor. The flow of C₂H₄ and HOAc to the reactor was interrupted periodically, and a stream of O was passed through the catalyst bed to regenerate the catalyst.

L5 ANSWER 25 OF 52 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1977:161909 CAPLUS

DOCUMENT NUMBER: 86:161909

TITLE: Catalysts for organic acetate production

PATENT ASSIGNEE(S): Bayer A.-G.; Fed. Rep. Ger.

SOURCE: Jpn. Tokkyo Koho, 4 pp.
CODEN: JAXXAD

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 51025438	B4	19760730	JP 1967-52769	19670818
CA 954529	A1	19740910	CA 1964-903693	19640527
BE 648814	A	19641204	BE 1964-648814	19640604
NL 6406336	A	19641207	NL 1964-6336	19640604

PRIORITY APPLN. INFO.:

AB Pd salt supported by a catalytic carrier is reduced to

Pd metal in an aqueous alkaline solution containing reducing agent. The carrier is then impregnated with alkali and/or alkaline earth metal acetates and dried to give a catalyst for gas-phase production of organic acetates from a mixture of olefin, O₂, and HOAc. Thus, Al₂O₃ catalytic carriers (80 m²/g surface area) were impregnated with aqueous PdCl₂ solution, then immersed in an alkaline N₂H₄ solution the carriers contained 2 weight % Pd at this stage. The carriers were then impregnated with aqueous solution containing LiOAc (12 weight parts/100 weight parts final catalyst) and dried at 150° under vacuum to give catalysts. A 500 cm³ catalyst sample was then placed in a 1500 mm long tube (22 mm inner diameter) and a mixture of ethylene 2.08, HOAc 1.83, and O₂ 0.42 mol/hr was passed through the tube at 135° and 1 atmosphere; 18% of the ethylene was converted with 87.3% of the products as vinyl acetate and 12.7% of the products as CO₂.

L5 ANSWER 26 OF 52 CAPIUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1977:161905 CAPIUS
DOCUMENT NUMBER: 86:161905
TITLE: Silica catalytic supports
INVENTOR(S): Kawai, Kohichiro; Fujiwara, Yuzuru; Nakamura, Michihiro
PARENT ASSIGNEE(S): Kuraray Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKKXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO. KIND DATE APPLICATION NO. DATE
JP 52004490 A2 19770113 JP 1975-79804 19750627
PRIORITY APPLN. INFO.: JP 1975-79804 A 19750627
AB Sintered silica having a surface area of 150-600 m²/g, total pore volume of 0.3-3.0 mL/g, volume of 40-60 Å diameter pores 0.1-1.2 mL/g, volume of 800-1300 Å diameter pores 0.1-0.5 mL/g, and bulk d. 0.2-0.55 g/mL is useful as catalyst carrier. The supports are especially useful for catalysts used for gas phase synthesis of unsatd. esters from olefins. Thus, Aerogel (from Fuji Davison Chemical Co.) was sintered 4 h at 900°, pulverized to give SiO₂ powder (4 µ average diameter, porosity 0.65 mL/g, surface area 210 m²/g, average micropore diameter 112 Å, bulk d. 0.50 g/mL), 5 kg of which was mixed with 9 L of aqueous 10 weight % Snowtex-N (silica gel from Nissan Kagaku Kogyo K.K.), and the mixture was made into 5-mm-diameter spherical pellets, the pellets were dried at 100° (5 h) and sintered at 700° (4 h) to give catalytic support whose surface area, total pore volume, small pore (40-60 Å) volume, large pore (1000-1300 Å) volume, bulk d., and compressive strength were 252 m²/g, 1.14, 0.6, 0.25 mL/g, 0.38 g/mL, and 14.0 kg/pellet, resp. The support was then impregnated with Pd 3.3, Au 1.5, and KOAc 30 g/L-silica, and vinyl acetate was synthesized from a mixture of ethylene 60, O₂ 10, HOAc 30 mol. % at 145°, space velocity 800/h (at 0°, 1 atm), and at 1 atm: the rate of vinyl acetate production was 2.80 ton/m³-catalyst-day.

L5 ANSWER 27 OF 52 CAPIUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1975:605969 CAPIUS
DOCUMENT NUMBER: 83:205969
TITLE: Carboxylic acid ester
INVENTOR(S): Onoda, Takeru; Wada, Keisuke; Otake, Masayuki
PARENT ASSIGNEE(S): Mitsubishi Chemical Industries Co., Ltd., Japan
SOURCE: Ger. Offen., 22 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent

LANGUAGE: German
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO. KIND DATE APPLICATION NO. DATE
DE 2510089 A1 19750918 DE 1975-2510089 19750307
JP 50121191 A2 19750922 JP 1974-28416 19740312
JP 56034345 B4 19810810
JP 51008188 A2 19760122 JP 1974-79007 19740710
JP 56021463 B4 19810519 NL 1975-2572 19750305
NL 7502572 A 19750916 FR 1975-7540 19750311
FR 2263999 A1 19751010 GB 1975-10076 19750311
GB 1462749 A 19770126 JP 1974-28416 A 19740312
JP 1974-79007 A 19740710

AB Aromatic compds. or olefins were converted into esters by reaction with O and HOAc in the gas phase in the presence of a catalyst consisting of Pd, Sb and K or Zn acetate. The catalyst support (SiO₂) was first soaked in an aqueous solution of Sb compound (e.g., SbCl₃), dried, and calcined in a stream of O₂, then soaked in Pd salt and HOAc salt solution, dried and calcined. Reaction of C₆H₆ with O and HOAc in the presence of these catalysts gave PhOAc.

L5 ANSWER 28 OF 52 CAPIUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1975:98874 CAPIUS
DOCUMENT NUMBER: 82:98874
TITLE: Carbon-chain polymers
INVENTOR(S): Pomogailo, A. D.; Lisitskaya, A. P.; Ponomareva, T. I.; Matkovskii, P. E.; Raspopov, L. N.; Rozenberg, B. A.; D'yachkovskii, F. S.

PATENT ASSIGNEE(S): Institute of Chemical Physics, Chernogolovka, USSR
SOURCE: U.S.S.R. From: Otkrytiya, Izobret., Prom. Obraztsy, Tovarnye znaki 1974, 51(33), 74.

CODEN: URXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Russian
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO. KIND DATE APPLICATION NO. DATE
SU 442187 T 19740905 SU 1972-1852733 19721130
PRIORITY APPLN. INFO.: SU 1972-1852733 A 19721130
AB In melt, solvent, or gas phase polymerization of α-olefins, optionally with dienes, in the presence of an organic metallic compound, polymer yield was improved when the catalyst support was hydrolyzed styrene-vinyl acetate copolymer [25213-29-0]. The catalysts contained a Group I-III compound and a Group IVA-VI or VIII transition metal compound

L5 ANSWER 29 OF 52 CAPIUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1975:90646 CAPIUS
DOCUMENT NUMBER: 82:90646
TITLE: Catalyst for gaseous production unsaturated esters containing titanium (oxide), palladium, alkali metal carboxylate and a carrier

INVENTOR(S): Nakamura, Seishiro; Kushida, Koichi; Yasui, Akio
PARENT ASSIGNEE(S): Kuraray Co., Ltd.
SOURCE: Jpn. Tokkyo Koho, 3 pp. Division of Japan. 72 45,324 (CA 78: 57793a).
CODEN: JAXXAD
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO. 49030809
KIND B4
DATE 1974-08-16
APPLICATION NO. JP 1972-17873
DATE 1972-02-21
PRIORITY APPL. INFO.:
AB A catalyst for gas-phase ester manufacture contains 0.1-10 wt. metal of Pd metal, 0.1-20 alkali metal carboxylate, and 0.01-50 weight % Ti metal or oxide, with optional Au or Ag additives, on an active C, Al₂O₃, SiO₂, or aluminosilicate carrier. The Ti is added to the known Pd catalyst by conventional methods, giving greater tolerance to severe reaction conditions. The esters, e.g., vinyl acetate, are prepared by reaction of alkene with carboxylic acid and oxygen at 80-200° under 1-10 atmospheric pressure.

L5 ANSWER 30 OF 52 CAPLUS COPYRIGHT 2006 ACS ON STN
ACCESSION NUMBER: 1974:412587 CAPLUS
DOCUMENT NUMBER: 81:12587
TITLE: Organic esters
INVENTOR(S): Nakamura, Seishiro; Yasur, Teruo
PATENT ASSIGNEE(S): Kuraray Co., Ltd.
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKKXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO. 48103509
KIND A2
DATE 1973-12-25
APPLICATION NO. JP 1972-35353
DATE 1972-04-07
JP 56052008
KIND B4
DATE 1981-12-09
APPLICATION NO. JP 1972-35353
DATE 1972-04-07

PRIORITY APPL. INFO.:
AB Olefins, esters of unsatd. alcs., or alkylbenzenes were treated with O and carboxylic acids to give organic esters in the presence of a Pd catalyst on a carrier, in which the volume of pores having a diameter ≥ 1000 Å occupied 28% of the total volume of pores. Thus, a gas mixture containing butadiene, O, AcOH, and N (30:10:20:40) was passed at 140° and 5 l./hr over a Pd catalyst on an alumina carrier, in which the volume of pores with a diameter ≥ 1000 Å occupied 98% of the total pore volume, to give 1,4-diacetoxy-2-butene (I), 3,4-diacetoxy-1-butene (II), butadienylacetate (III), resp., at 52, 2, and 3 g/catalyst 1-hr after 1 hr reaction. Similarly, with a silica carrier methacryl acetate and 2-methylene-1,3-diacetoxy-propane were formed from a mixture of isobutylene, O, AcOH, and N. Also, 1-butene, 2-butene, AcOH, and air gave I, II, 3-acetoxy-1-butene, 1-acetoxy-2-butene, and III. Similarly, 1-acetoxy-2-butene, AcOH, O, and N gave I, II, and III.

L5 ANSWER 31 OF 52 CAPLUS COPYRIGHT 2006 ACS ON STN
ACCESSION NUMBER: 1974:127889 CAPLUS
DOCUMENT NUMBER: 80:127889
TITLE: Identification of hydroxy(acetoxy)alkanes by gas-liquid chromatography combined with ir and NMR spectroscopy
AUTHOR(S): Nikitina, N. S.; Mysak, A. E.; Veretenova, T. N.; Tikhonov, V. P.; Lebedev, E. V.
CORPORATE SOURCE: Vses. Nauchno-Issled. Proektno-Konstr. Inst. Neftepererab. Neftekhim. Prom., Kiev, USSR
SOURCE: Neftepererabotka i Neftekhimiya (Kiev) (1973), No. 9, 88-91
CODEN: NEFNBY; ISSN: 0548-1406
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB During the preparation of C₈-18 1,2-alkanediols (I) from α-

olefins by the Prileshaev reaction, the 1-acetoxy-2-hydroxyalkane (II) and 1-hydroxy-2-acetoxyalkane (III) intermediates and I were separated by gas chromatog. on a 5% SE-30/Chromosorb W column by using He carrier gas and a flame ionization detector. For all compds., the retention time increased with increasing C number. On the basis of ir and NMR spectra, the order of elution was I, III, and II off each group with a given C number

L5 ANSWER 32 OF 52 CAPLUS COPYRIGHT 2006 ACS ON STN
ACCESSION NUMBER: 1974:15437 CAPLUS
DOCUMENT NUMBER: 80:15437
TITLE: Unsaturated esters
INVENTOR(S): Saito, Toshihiro; Takano, Misao; Moriyama, Shigeru; Murayama, Hiroshi
PATENT ASSIGNEE(S): Tekkoshu Co., Ltd.
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKKXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO. 48049711
KIND A2
DATE 1973-07-13
APPLICATION NO. JP 1971-84699
DATE 1971-10-27
JP 52029294
KIND B4
DATE 1977-08-01
APPLICATION NO. JP 1971-84699
DATE 1971-10-27

PRIORITY APPL. INFO.:
AB Vapor phase reaction of a lower unsatd. hydrocarbon with an acid in the presence of O over a palladium [7440-05-3] and gold [7440-57-5] catalyst optionally containing uranium [7440-61-1] and supported on a zinc spinel, gave unsatd. esters. Thus, Al₂O₃ was saturated with aqueous Zn(NO₃)₂ solution and heated to form a spinel which was soaked with HCl containing FeCl₂, AuCl₃, and UOAc₃. The treated spinel was treated further with alkaline NH₄H₂O and aqueous AcOK to give a catalyst containing Pd 1, Au 0.1, U 0.1, and AcOK 4.7 weight%. A mixture of propylene [115-07-1] 0.914, O 0.441, and acetic acid [64-19-7] 0.513 mole/hr was passed over the catalyst at 160 deg. to give allyl acetate [591-87-7]. Vinyl acetate [108-05-4], vinyl propionate [105-38-4], and allyl propionate [2408-20-0] were similarly prepared

L5 ANSWER 33 OF 52 CAPLUS COPYRIGHT 2006 ACS ON STN
ACCESSION NUMBER: 1972:526021 CAPLUS
DOCUMENT NUMBER: 77:126021
TITLE: Silica supports for palladium catalysts for olefin oxacylation

INVENTOR(S): Fernholz, Hans; Wunder, Friedrich; Schmidt, Hans Joachim
PATENT ASSIGNEE(S): Farbwerke Hoechst A.-G.
SOURCE: Ger. Offen., 12 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO. 2100778
KIND A
DATE 1972-07-20
APPLICATION NO. DE 1971-2100778
DATE 1971-10-18
DE 2100778
KIND B2
DATE 1977-11-17
APPLICATION NO. NL 1972-13
DATE 1972-10-03
NL 7200013
KIND A
DATE 1974-08-16
APPLICATION NO. ES 1972-398552
DATE 1972-01-04
ES 398552
KIND A
DATE 1972-09-27
APPLICATION NO. ZA 1972-37
DATE 1972-01-04
ZA 1972-37
KIND A1
DATE 1973-07-05
APPLICATION NO. AU 1972-37544
DATE 1972-01-04
AU 7237544

IT 946346 A 19730521 IT 1972-19094 19720105
CH 555797 P 19741115 HU 1972-111 19720105
HU 164760 A 19740411 HU 1972-H01447 19720106
GB 373272 A 19741106 GB 1972-656 19720106
SU 510991 D 19760415 SU 1972-1735287 19720106
GB 312571 B 19740110 AT 1972-113 19720107
PL 89222 P 19751031 PL 1972-132807 19720107
SE 392284 B 19770321 SE 1972-164 19720107
NO 136925 P 19770630 CS 1972-103 19720107
JP 505215 B 19770822 NO 1972-29 19720107
BE 777880 A1 19820129 JP 1972-4356 19720107
FR 2121693 A5 19720710 BE 1972-112706 19720110
FR 2121693 B1 19720825 FR 1972-611 19720110
RO 58637 P 19770715 RO 1972-69312 19721006
US 393919 A 19760217 US 1973-372686 19730622
US 393919 A 19760217 DE 1971-215901 A2 19710106
DE 1971-2100778 A 19710108

AB Pd catalyst supports for the manufacture of RICO2R (R = CH2:CH, CH2:CHCH2, or CH2:CMeCH2; R1 = Me or Et) from RH and RICO2H in gas phase in the presence of O consisted of SiO2 (sp. surface area 205 m²/g, pore volume 0.85 ml/g, and <10% pores of diameter <30 Å). Thus, 850 l. C2H4/hr. 75 l. O/hr and 870 g HOAc/hr were passed over a catalyst (from 1 l. of above support, Pd acetate 10.7, Cd(OAc)2.19, and AcOK 20 g) to give 305 g MeCO2CH:CH2/hr as compared with 220 g/hr for SiO2 supports of sp. surface area 160 m²/g, pore volume 0.73 ml/g, and pellet size 6 mm.

L5 ANSWER 34 OF 52 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1970:457084 CAPLUS
DOCUMENT NUMBER: 73:67084
TITLE: Preparation of unsaturated carboxylic esters by olefin oxidation
INVENTOR(S): Sennewald, Kurt; Vogt, Wilhelm; Erpenbach, Heinz; Glaeser, Hermann
PATENT ASSIGNEE(S): Knapsack A.-G.
SOURCE: Ger. Offen., 15 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 1808610	A	19700611	DE 1968-1808610	19681113
DE 1808610	B2	19740822		
DE 1808610	C3	19750410		
CH 517692	A	19720115		
BR 6913955	A0	19730315	CH 1969-517692	19691030
NL 6916848	A	19700515	BR 1969-213955	19691106
GB 1250265	A	19711020	NL 1969-16848	19691107
CS 164835	P	19751128	GB 1969-1250265	19691107
ES 373419	A1	19711216	CS 1969-7395	19691110
AT 289742	B	19710510	ES 1969-373419	19691111
SE 371433	B	19741118	AT 1969-10609	19691112
NO 132864	B	19751013	SE 1969-15523	19691112
RO 59690	P	19760615	NO 1969-4486	19691112
BE 741636	A	19700513	RO 1969-61551	19691112
FR 2024859	A5	19700903	BE 1969-741636	19691113
JP 51020485	B4	19760625	FR 1969-38989	19691113
			JP 1969-91062	19691113
			DE 1968-1808610	A 19681113

PRIORITY APPLN. INFO.:
AB Vinyl acetate (I), propionate, or isobutyrate and alkyl acetate are prepared from olefins, C2-20 aliphatic and aromatic carboxylic acids, and mol. O with a metal ion catalyst and catalyst activators.

Thus, a carrier of silicic acid globules was ground in a solution of PdCl2 and HAuCl4, dried, and treated with aqueous hydrazine hydrate. A gaseous mixture of AcOH, N. O, and C2H4 was preheated with KOAc and NaOAc on silicic acid and passed over the heated catalyst to give a condensate containing 91% I. This method gave 7.1% C2H4 conversion and high catalyst efficiency, while a method in which the gas mixture was not pretreated with HOAc and NaOAc gave lower catalyst efficiency and 0.23% C2H4 conversion.

L5 ANSWER 35 OF 52 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1970:455664 CAPLUS
DOCUMENT NUMBER: 73:55664
TITLE: Unsaturated esters of carboxylic acids
INVENTOR(S): Sennewald, Kurt; Vogt, Wilhelm; Glaeser, Hermann; Erpenbach, Heinz; Ohorodnik, Alexander; Joest, Herbert
PATENT ASSIGNEE(S): Knapsack A.-G.
SOURCE: Ger. Offen., 10 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 1804347	A	19700618	DE 1968-1804347	19681022
DE 1804347	C3	19730222		
SU 438176	D	19740730	SU 1969-1362726	19690917
NL 6915303	A	19700424	NL 1969-15303	19691009
AT 289740	B	19710510	AT 1969-9857	19691020
ZA 6907398	A	19710331	ZA 1969-7398	19691021
GB 1235632	A	19710616	GB 1969-1235632	19691021
BE 740637	A	19700422	BE 1969-740637	19691022
FR 2030060	A5	19701030	FR 1969-36257	19691022

PRIORITY APPLN. INFO.:
AB Unsaturated esters of carboxylic acids were prepared by reaction of olefins with carboxylic acids in the presence of O and a Pd catalyst at 180-90°/8 atmospheric Thus, 1350 g SiO2 carrier of 0.1-0.2 mm particle size was mixed with 16.1 g PdCl2 and 5.85 g HAuCl4, dried at 80° under N, added to alkaline N2H4 solution, mixed with 125 g EtCO2K in H2O, and dried at 40-60° in vacuo to give a catalyst containing 1% Pd, 0.4% Au, and 3% K. A gas containing 64% ethylene, 16% EtCO2H, 8% O, and 12% CO2 was passed over the above fluidized bed catalyst at 190° 8 atm at 34 cm/sec and 4.1 sec contact time to give 92% EtCO2CH:CH2, based on 8.5% ethylene reacted. Similarly prepared were 91% iso-PrCO2CH:CH2, based on 6.5% ethylene reacted, and 85% AcOCH2CH:CH2, based on 5.2% CH2:CHMe reacted, resp.

L5 ANSWER 36 OF 52 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1969:513096 CAPLUS
DOCUMENT NUMBER: 71:113096
TITLE: Minor acidic constituents of vetiver oil. II.
AUTHOR(S): Kido, Fusao; Sakuma, Reiko; Uda, Hisaaki; Yoshikoshi, Akira
CORPORATE SOURCE: Tokoku Univ., Sendai, Japan
SOURCE: Tetrahedron Letters (1969), (37), 3169-72
CODEN: TELEAY; ISSN: 0040-4039
DOCUMENT TYPE: Journal
LANGUAGE: English
GI For diagram(s), see printed CA Issue.
AB The 2 minor acids isolated from vetiver oil were separated as Me esters by preparative gas liquid chromatog. of 6% lowest boiling fraction, b2 112-18°, of the whole ester mixture

and submitted to mild alkaline hydrolysis to yield the major acid, cyclohexanecarboxylic acid, C15H22O2 (I, R = CO2H) (II), m. 151.5-2.5°, [α]_D²⁰ -14.7° (c 1.25, CHCl₃), and the minor acid epicyclo-copacampheic acid (I, R = CO2H) (III), m. 168.0-8.5°, [α]_D²⁰ 5D 78.3° (c 3.6, CHCl₃).

Spectral and chemical evidence indicated that I are saturated tetracyclic compds.

with one secondary and 2 tertiary Me groups with a probable tricyclic carbon framework, both derived from the same parent hydrocarbon I (R = Me) (IV). The mixed acids treated with Pb(OAc)₄-LiCl followed by dehydrochlorination of the epimeric Cl derivs. (I, R = Cl) gave a mixture of geometrically isomeric olefins (V). The N.M.R. chemical shift of the values for the secondary Me group in the spectra of the Cl derivs. and V showed the existence of the >CHMeCO₂H group in II and III. V hydroxylated and submitted to glycol cleavage gave a single cyclic ketone (VI), v 1701, 1420 cm⁻¹. The Baeyer-Villiger oxidation of VI afforded an α-lactone, C12H16O₂, m. 109-11°, subsequently transformed into an oxo carboxylic acid (VII), C12H16O₃, m.

114.0-15.5°, by saponification followed by Jones oxidation. The spectral properties of VII and its Me ester verified the tricyclicanone structure and it was presumed that the C skeleton of I and II, including the 3-carbon side chain would be that of cyclosativene (VIII, R = iso-Pr, R1 = H) (IX). According to the reaction sequence: -CO₂Me → -CH₂OH → p-MeC₆H₄SO₃CH₂ → -Me, II and III gave the same hydrocarbon IV whose IR and N.M.R. spectra indicated stereoisomeric with IX with respect to the iso-Pr group, a supposition confirmed by conversion of II and III to IX by decarboxylative acetoxylation to I (R = OAc) with Pb(OAc)₄; hydrolysis with alic. KOH followed by Jones oxidation to VIII (R = H, R1 = Ac); epimerization with NaOMe to yield the isomer VIII (R = Ac, R1 = H); and Wittig reaction with Ph₃P:CH₂ to VIII (R = MeC:CH, R1 = H), followed by catalytic hydrogenation over (Ph₃P)3RhCl as catalyst. The resulting hydrocarbon C15H24, [α]_D²⁰ 67.8° (c 1.15, CHCl₃), M_n204 was spectroscopically identical with (-)-cyclosativene (IX), [α]_D²⁰ 94.1°, leading to the structures of II and III. The strongly pos. sign of the Cotton effect in the O.R.D. of VI supported the absolute stereochemistry of the C skeleton of VI.

L5 ANSWER 37 OF 52 CAPLUS COPYRIGHT 2006 ACS ON STN
ACCESSION NUMBER: 1969:402987 CAPLUS

DOCUMENT NUMBER: 71:2987

TITLE: Esters of unsaturated alcohols

INVENTOR(S): Capp, Clifford W.; Durston, Peter J.

PATENT ASSIGNEE(S): BP Chemicals (U.K.) Ltd.

SOURCE: Brit., 2 pp.

CODEN: BRXXAA

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 1148583	---	---	---	---
AB	Vinyl acetate (I) is manufactured by combining C ₂ H ₄ , O, and AcOH in the vapor phase at elevated temps. in the presence of Pd deposited on Al ₂ O ₃ , Fe oxide, or Al Mg spinel supports. The exhausted catalysts are reactivated by treatment in 2N NaOH. Thus, 8-16-mesh Al ₂ O ₃ was treated with 1:1 PdCl ₂ -HCl solution, dried at 140°, and reduced with alkaline N ₂ H ₄ to yield 2% Pd/al ₂ O ₃ catalyst (II). C ₂ H ₄ 0.29, O 0.06, and AcOH 0.14 mole/hr. were combined at 140° in the presence of II to yield 0.21 mole/l./hr. I after 4 hrs. and 0.13 mole/l./hr. for the next 190 hrs. before falling to 0.02 mole/l./hr. after 217 hrs. The spent II was treated with 3 successive ams. of 2N NaOH, followed by 6 successive washings with cold H ₂ O, and drying at 140° to give a reactivated-II that yielded 0.18 mole/l./hr. I for the next 236 hrs. Uses of other	19690416	GB 1966-28591	19660625

Pt-group metals on aluminosilicates, heavy metal oxides, metal oxide-Al₂O₃ complexes, carbon, or pumice, and catalyst reactivation with aqueous solns. of KOH, Na₂CO₃, or K₂CO₃ and alc. solns. of Na-(or K) methoxide or methoxide, were claimed.

L5 ANSWER 38 OF 52 CAPLUS COPYRIGHT 2006 ACS ON STN
ACCESSION NUMBER: 1969:116669 CAPLUS

DOCUMENT NUMBER: 70:116669

TITLE: Finely divided metals of the platinum group

PATENT ASSIGNEE(S): Monsanto Co.

SOURCE: Brit., 7 pp.

CODEN: BRXXAA

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 1146530	---	---	---	---
DE 1533102	---	19690326	GB 1966-22105	19660518
PRIORITY APPLN. INFO.: DE	---	---	---	---
AB	A method of producing finely divided metals of the Pt group, the products obtained, supported catalysts made therefrom and their use for hydrogenation and dehydrogenation are described. The finely divided metal is obtained by reducing a solution of a salt of the metal in the presence of an alc., acetal, ketone, ether, carboxylic acid ester, or olefin, which has a reducing action on the salt and forms a soluble complex with the metal, by the action of H ₂ on the solution in the absence of a borohydride, or by thermally decomposing the complex, thereby producing the metal in a zero-valent state. The process may be carried out in the presence of a non-reducing solvent for the metal salt. Particularly suitable reducing agents (solvents) for this process are the cyclic ethers, especially propylene oxide. In carrying out the treatment with H ₂ , the solution may be preheated. The thermal decomposition of the complex	19650518		

may be effected before or after removal of excess reducing agent and may occur slowly at room temperature; usually it is sufficient to heat the solution for 120 min. up to 90° to obtain a quant. suspension of the Pt. metal. The finely divided Pt metals can be deposited on supports, especially Al₂O₃ which have been subjected to phys. or chemical pretreatment such as glowing, action of acids, or with superheated H₂O-vapor. The metals are established on the support by steeping or by pouring the solution onto the support. Solvent is then removed in vacuo at room temperature with effective stirring. The metal compound which remains on the support contains enough, probably complex-linked, reducing agent to give the zero-valent metal on heating up to higher temps. (e.g., to 150-250° for hydrogenation catalysts) preferably under reduced pressure. For example, to prepare finely divided Pt on a support, the pulverized or granulated support is heated in a vacuum (0.004 mm.) at 150° for 2 hrs. The Pt salt is subject to the same treatment. A solution containing (1-2) + 10-2 mole Pt salt/mole solution is prepared in an atmosphere of Ar by using the cited reducing agent. The solution is slowly added, with cooling, either to the cooled powdery support or to the granulated support previously freed of air by evacuating until the carrier mass is well saturated with it. The excess solvent is distilled immediately with stirring in a vacuum at 25° and the catalyst is heated in the vacuum at the indicated after-treatment temperature for 1 hr. After cooling the catalyst to room temperature, the catalyst is used approx. 24-48 hrs. later. The air is admitted. The catalysts prepared with different reducing agents and activities of such catalysts prepared with different reducing agents and

supports are tabulated.

L5 ANSWER 39 OF 52 CAPLUS COPYRIGHT 2006 ACS ON STN
ACCESSION NUMBER: 1969:105986 CAPLUS
DOCUMENT NUMBER: 70:105986
TITLE: Carboxylic acids and their unsaturated esters

INVENTOR(S): Sennewald, Kurt; Vogt, Wilhelm; Erpenbach, Heinz;
Glaser, Hermann

PATENT ASSIGNEE(S): Knapsack A.-G.
SOURCE: S. African, 18 pp.

CODEN: SEFXAB

PATENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
ZA 6802010	----	-----	-----	-----
DE 1618591	----	19680829	-----	-----
FR 1567312	----	-----	-----	-----
GB 1189091	----	-----	-----	-----
RO 52442	----	-----	-----	-----
US 3631079	----	19711228	-----	-----
US 19680322	----	-----	-----	-----
US 19670405	----	-----	-----	-----

PRIORITY APPLN. INFO.:

AB An aldehyde is partially or completely substituted for its corresponding acid in the gas-phase reaction of an olefin, the carboxylic acid, and O in contact with a Pd-containing catalyst at elevated temperature to give an unsatd. ester of the acid. The aldehyde is simultaneously oxidized in the process, thus reducing the cost of oxidation of the aldehyde to the acid in an addnl. step. Thus, the catalyst was prepared by impregnating 1 kg. of a ball-shaped silicic carrier with an aqueous solution of 8 g. PdCl₂ and 3 g. H₂NC₁₄, drying the mixture with agitation, pouring into a 4-5% H₂NNH₂.H₂O solution at 40°, and, after reduction was complete, pouring off the supernatant liquid, washing the catalyst with distilled H₂O, impregnating with 1% aqueous KOAc

solution, decanting the solution, and drying the catalyst under reduced pressure

at 60°. The catalyst (1 l.) was placed in a steel tube, and 500 l./hr. C₂H₄, 500 g./hr. HOAc, and 25 g./hr. AcH was passed over the catalyst at 6 atmospheric absolute. The reaction gas was cooled to 0° to give a mixture comprising 70% (428 g.) HOAc, 23.4% vinyl acetate, 6.45% H₂O, and approx. 0.2% AcH. Approx. 32.1 g. fresh HOAc was formed by AcH oxidation, and approx. 30.9% of the HOAc obtained by oxidation had reacted. Vinyl isobutyrate was similarly prepared

L5 ANSWER 40 OF 52 CAPLUS COPYRIGHT 2006 ACS ON STN
ACCESSION NUMBER: 1969:96179 CAPLUS
DOCUMENT NUMBER: 70:96179
TITLE: Vinyl acetate from saturated organic acids and olefins

PATENT ASSIGNEE(S): Stamlicarbon N. V.

SOURCE: Meth. Appl., 7 pp. Addn. to Neth. Appl. 66 08559

CODEN: NAXXAN

PATENT TYPE: Patent

LANGUAGE: Dutch

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
NL 6706640	----	-----	-----	-----
DE 1643077	----	19681113	-----	19670512

GB 1154517

AB Catalysts useful for preparing unsatd. esters from saturated organic acids, olefins, and mol. O are prepared by impregnating a carrier with a solution of a Pd salt and Pt, or Rh salt, and then drying, hydrolyzing, and reducing the impregnated carrier mass.

Thus, catalysts are prepared by impregnating Al₂O₃ with solns. of Pd salts and Pt salts. The impregnated mass is then dried, hydrolyzed by treatment with boiling NaHCO₃ solution, and reduced. These catalysts are used in the synthesis of vinyl acetate (I) by passing 120 l./hr./l. of catalyst of a 1:1:0.4 molar C₂H₄-HOAc-O gas mixture over the catalyst at 1 atmospheric pressure. For example a catalyst containing 2.9% Pd and 29.8 and 91%, resp., in 18 days. A catalyst containing 2.0% Pd and no Pt gave 15.1% conversion and 92% yield in 1 day and 7 and 90%, resp., in 4 days at 118°. A catalyst containing no Pd and 3.0% Pt gave resp. values of 10.5 and 9% in 1 day at 111°. Best results (42.5 and 88%, resp.) were obtained with 2.2% Pd and 0.03% Pt in 1 day at 120°. A catalyst containing Rh was also used. These catalysts have excellent retention of activity over long operating times, and give good conversions to the desired product.

L5 ANSWER 41 OF 52 CAPLUS COPYRIGHT 2006 ACS ON STN

ACCESSION NUMBER: 1969:96171 CAPLUS

DOCUMENT NUMBER: 70:96171

TITLE: Gas-phase synthesis of vinyl esters

from ethylene, oxygen, and carboxylic acids with a palladium-alkali metal acetate catalyst Kurashiki Rayon Co., Ltd. Brit., 10 pp.

CODEN: BRXXAA

PATENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 1142250	----	-----	-----	-----
DE 1568939	----	19690205	-----	19661215
FR 1520433	----	-----	-----	-----
US 3567767	----	19710302	-----	19661209
US 3567767	----	-----	-----	19651217

PRIORITY APPLN. INFO.:

AB Vinyl esters were prepared by continuous gas phase synthesis from C₂H₄, O, and an organic carboxylic acid, using a catalyst system having an improved and high catalytic activity and which minimizes the rate of loss of its catalytic activity by performing the reaction under a low partial pressure of O and organic carboxylic acid. Thus, bead alumina having 99.3% Al₂O₃, a 210 m.²/g. surface area, and 10-14 mesh were calcined 3-5 hrs. in air at 550-1300°. The bead alumina was prepared by adding 175 g. CaCO₃ wetted with 30 cc. water to a solution of 342 g. Al₂(SO₄)₃ dissolved in 800 cc. water. CO₂ was generated and CaSO₄ was precipitated. CaSO₄ was filtered to give Al₂O₃.1.1SO₃ (I). The liquid had 3-38 pH. I was dropped through an 85° heated glass tube to give a gel, which was purified and calcined 5 hrs. at 500°. The calcined carrier (35 parts) was added to 50 parts water containing 0.3 part HCl and 1.3 part PdCl₂ and the system dried. PdCl₂ was reduced by dropping a reducing liquid on the dried catalyst system. The liquid was prepared by adding 2.5 parts of 80% hydrazine hydrate solution to 50 parts N NaOH solution. The reduced catalyst was water-washed and placed in 10 parts water containing 0.7 parts AcOH and dried. The catalyst (35 g.) was placed in a glass tube heated to 110° and a gaseous mixture containing C₂H₄, O, AcOH (4:1:2 molar ratio) was passed over the catalyst at 8 l./hr. In an experiment, where the calcination temperature for the carrier was 900° and the surface area of the carrier was 120 m.²/g., the production rate of vinyl acetate (II) was 40.1 g. II/l./catalyst hr., the II selectivity, 94%, and AcH selectivity, <0.1.

L5 ANSWER 42 OF 52 CAPLUS COPYRIGHT 2006 ACS ON STN
ACCESSION NUMBER: 1966:27122 CAPLUS
DOCUMENT NUMBER: 64:27122
ORIGINAL REFERENCE NO.: 64:4949d-e
TITLE: Ethylenically unsaturated **esters**
PATENT ASSIGNEE(S): Pullman Inc.
SOURCE: 5 pp. Patent
DOCUMENT TYPE: Unavailable
LANGUAGE: Unavailable
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	19601223
GB 1007815	---	19651022	GB	---	19601223

PRIORITY APPLN. INFO.:
AB Olefins halogenated on one of the doubly bound C atoms react in liquid or vapor phase, under anhydrous conditions, with carboxylic acids in the presence of halides of Group VIII metals to form unsatd. **esters**. The halides may be used in combination with a support carrier, or diluent, such as alumina, silica gel, and alundum. The greater the ratio of the catalyst to olefin reactant the faster the rate of reaction. Reaction takes place between 70 and 300°F. and mostly at the atmospheric pressure. 3.56 g. PdCl₂ and 11.36 g. Na₂HPO₄ is kept for 2-4 days in vacuo at 375°F., cooled to room temperature, 50 cc. of isooctane added, and the vessel flushed with vinyl chloride at 720 mm., with shaking. The reaction vessel is charged with 3.76 g. AcOH and shaken at room temperature for 4 hrs. The yield of vinyl acetate is 2.6 mole-% on the basis of PdCl₂.

L5 ANSWER 43 OF 52 CAPLUS COPYRIGHT 2006 ACS ON STN
ACCESSION NUMBER: 1966:26837 CAPLUS
DOCUMENT NUMBER: 64:26837
ORIGINAL REFERENCE NO.: 64:4887g-h, 4888a-h, 4889a

TITLE: Solvolytic rearrangement of the 2-(1-cyclopentenyl)ethyl system
AUTHOR(S): Closson, W. D.; Kwiatkowski, G. T.
CORPORATE SOURCE: Columbia Univ.
SOURCE: Tetrahedron (1965), 21(10), 2779-89
CODEN: TETRAH; ISSN: 0040-4020
DOCUMENT TYPE: Journal
LANGUAGE: English
GI For diagram(s), see printed CA Issue.
AB Cf. CA 62, 6357d. The acetoysis of 2-(1-cyclopentenyl)ethyl bromobenzene-sulfonate (I) was investigated. Reduction of 1-cyclopentenylacetic acid in tetrahydrofuran with LiAlH₄ yielded 90% 2-(1-cyclopentenyl)ethanol (II), b₃ 65-6°, n_D20 1.4781. Similar reduction of cyclopentylacetic acid gave 90% yield of 2-cyclopentylethanol (III), b₃ 77-8°. Conversion of 17 g. II gave 10 g. of the corresponding bromide, b₀ 5.43-4°. The bromide (57 millimoles) and 70 millimoles KCN in 25 ml. HOCH₂CH₂OH heated 2.5 hrs. at 100° and the cooled solution poured into saturated aqueous NaCl, extracted with Et₂O, and the residue on evaporation heated 20 hrs. at 95° in 200 ml. 20% aqueous KOH, the cooled solution washed with Et₂O and acidified with aqueous HCl, extracted with Et₂O, and the isolated 3-(1-cyclopentenyl) propionic acid, (2.5 g., m. 58-61°), reduced with LiAlH₄ in tetrahydrofuran yielded 84% 3-(1-cyclopentenyl)-propanol (IV), b₃ 66-7°. Preparation according to Alibisetti, et al. (CA 51, 1041d) gave 3-methylenecyclohexanol (V), b₃ 97.5-8.0°. Zn-Cu couple (2 g.) in 30 ml. dry Et₂O and 11.6 millimole 2-methylenecyclopentanone in 7 g. CH₂I₂ stirred 16 hrs. and diluted with 5 ml. saturated aqueous NH₄Cl, the organic layer and Et₂O washings washed, dried, and concentrated and the residual oil kept 16 hrs. in 10 ml. saturated MeONa

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under N, poured into saturated aqueous NaOH, and extracted with Et₂O yielded spiro[2.4]heptan-4-ol (VI), b₂ 75-8°. Similar conversion of 1-cyclopentenylmethanol gave 45% yield of bicyclo[3.1.0]hexan-1-methanol (VII), b₄₀ 96-8°; p-nitrobenzoate (VIII) m. 44-5°. Cyclopropylcarbinol and p-O₂NC₆H₄COCl in C₅H₅N gave cyclopropylcarbinyl p-nitrobenzoate, m. 56-7°. Spiro[2.4]heptan-4-yl p-nitrobenzoate (IX) was prepared by Appelquist and Landgrebe (CA 60, 1310d). Treatment of the appropriate alc. with the requisite sulfonyl chloride gave I (63%), 2-cyclopentylethyl p-bromobenzenesulfonate (X, oil, 62%), 3-(1-cyclopentenyl)propyl p-bromobenzenesulfonate (XI, m. 40.0-1.5°, 79%), and 3-methylenecyclohexyl tolylsulfonate (XII, oil, 75%). I (33.2 millimoles) and 40 millimoles NaOAc in 500 ml. AcOH heated 2 hrs. at 100° and added to 1 l. H₂O, extracted continuously with C₅H₁₂ and the extract slowly distilled to 250 ml. concentrate, submitted

to analysis on an 8-ft. 1,2,3-tris-(2-cyanoethoxy)propane column at 125° to show the presence of 10% of a mixture of 2 **olefins** (major constituent tentatively identified as 3-methylenecyclohexene, the remaining C₅H₁₂ evaporated and the acetate mixture (87.4% yield) reduced with LiAlH₄ in Et₂O gave a mixture of alcs., analyzed by gas chromatography to show the presence of VI 11.2, bicyclo[3.2.0]heptan-1-ol (XIII) 21, V 56.9, VII 6.2, and II 4.7%. XIII was identified by m.p. (42-3°) and ir and N.M.R. spectra, and showed a major peak at m/e 84, apparently due to loss of H₂C:CH₂. XII (4.14 millimoles) and 11 ml. 0.45M NaOAc-AcOH in 100 ml. AcOH heated 3 hrs. at 100° yielded 37% **olefins** (4:1 ratio, minor component probably 3-methylenecyclohexene) and 63% 3-methylenecyclohexyl acetate (XIV). The rate of acetoysis at 80° was only 5.07 ± 0.05 + 10-5 sec.-1, about half that of cyclohexyl tolylsulfonate (10.7 + 10-5 sec.-1) under the same conditions. IX (0.23 millimole) and 0.40 millimole 2,6-lutidine in 25 ml. 60% aqueous Me₂CO heated 4 hrs. at 100° in a glass ampul, the Me₂CO evaporated, and the aqueous solution extracted with Et₂O, washed

ml., examined by gas chromatography to show the presence of 60.6% VI, 25.4% XIII, and 14% V, and evaporated gave an oil; ir spectrum contd. bands present in the ir spectra of each of the 3 alcs. XIII (4.5 millimoles) and 1 millimole p-O₂NC₆H₄CO₂H in 100 ml. 60% aqueous Me₂CO heated 2.5 hrs. at 100° in a glass bomb gave a mixture containing 63.5:36.5 XIII-V. Solvolysis of 5.37 millimoles VIII with 8.72 millimoles 2,6-lutidine in 100 ml. 60% aqueous Me₂CO 60 hrs. at 100° gave 2.5% **olefin**, 1.5% VI, 4.3% XIII, 82.8% V, and 8.9% VII. The rates of solvolysis of p-nitrobenzoate **esters** of IX, VIII, and related p-nitrobenzoate **esters** were tabulated. Acetoyses and ethanolyzes were carried out by the ampul technique. All kinetic solns. were 0.036M in NaOAc and 0.030M in sulfonate **ester**. The aliquots were acidified with standard HClO₄-MeOH and back-titrated with 0.020N NaOAc-AcOH (acetolyses) or 0.015M NaOMe-MeOH (ethanolyses), using bromothymol blue indicator. Rates of solvolyses of I, X, 2-(2-cyclopentenyl)ethyl bromobenzenesulfonate (XV), 3-cyclopentylpropyl bromobenzenesulfonate (XVI), and XI were tabulated. The ethanolysis rate of I was essentially that of 2-substituted ethyl brosylates X and XV. On changing to AcOH, the reactivity of I increased slightly, whereas that of X and XV decreased sharply. The insensitivity of I to change in nucleophilicity of solvents is fairly typical of systems that solvolyze with participation of double bonds. The lack of any significant difference in acetoysis rates between XI and XVI supported the conclusion that inductive effects were minor and that anchimeric acceleration in the acetoysis of I is only about 40-fold. Comparison with other primary homoallylic systems indicated that a better value for anchimeric acceleration in the 2-cyclopentenylcarbinyl system is 50-60 fold. The enhanced rate and production of rearranged products on acetoysis of I clearly indicated participation of the double bond but direct ionization to an intermediate cation capable of yielding all of the

rearranged acetates seemed unlikely. The first-formed intermediate should account for the rate enhancement and the bicyclobutonium ion (XVII) would do so and would also explain formation of spiro[2.4]-heptan-4-yl acetate (XVIII) and bicyclo[3.2.0]heptan-1-yl acetate (XIX). The unrearranged 2-(1-cyclopentenyl)ethyl acetate (XX) probably came from a competing solvolytic displacement. The other two rearranged acetates, bicyclo[3.1.0]hexane-1-methyl acetate (XXI) and XIV cannot be obtained from XVII and a bridged homallylic ion (XXII) or a bridge cation (XXIII) were postulated as precursors with conformation. Accordingly the minor changes in bond lengths and conformation. According to the analysis of I was rationalized schematically as: I → XVII + chelharw. XXII (or XXIII) → XXIV → XIV, XVII → XVIII + XIX, XXII (or XXIII) → XXI, XXII (or XXIII) → XIV. Other cations could also be present but the proposed scheme is sufficient to account for the products and to provide a reasonable explanation for the reactivities of the related systems. This general reaction class may have synthetic utility. The biol. extensive 2-(β-indolyl)ethyl system is analogous in many ways to the 2-(1-cyclopentenyl)ethyl structure.

L5 ANSWER 44 OF 52 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1966:11686 CAPLUS
DOCUMENT NUMBER: 64:11686
ORIGINAL REFERENCE NO.: 64:2149e-h, 2150c
TITLE: Extension of sugar chains through acetylenic intermediates
AUTHOR(S): Horton, D.; Hughes, J. B.; Tronchet, J. M. J.
CORPORATE SOURCE: Ohio State Univ., Columbus
SOURCE: Chemical Communications (London) (1965), (20), 481-3
CODEN: CCMA8; ISSN: 0009-241X
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 64:11686
GI For diagram(s), see printed CA issue.
AB Oxidation of 1,2,3,4-di-O-isopropylidene-α-D-galactopyranose with MeSO₃N'-dicyclohexylcarbodiimide, followed by ethynylation of the resultant aldehyde gave the 6-epimeric mixture (I). The preponderant epimer (m. 130-1°) was reduced to the corresponding olefin, m. 106-08°. Similarly, ethynylation of periodate-oxidized 1,2-O-isopropylidene-α-D-glucopyranose gave a mixture of 5-epimers, the D-glucose-epimer gave a crystalline 3,5-dibenzoate, m. 191-3°. Reduction of the latter to the olefin, m. 143-5°, followed by ozonolysis, reduction, and hydrolysis gave glucose. The 3-epimeric heptynes (II) formed by ethynylation of 2,3,4,5-di-O-isopropylidene-aldehyde-L-arabinose were separated by gas-liquid chromatography (9.1.c.) to give the D-glucose-isomer, m. 67-9°, [α]_D 22D 6.5° (CHCl₃) and the D-manno-isomer, [α]_D 22D -24° (CHCl₃), in 3:2 proportion; the structures were established by degradation. The 3-acetate of II was treated with bis(1,2-dimethylpropyl)borane (IV) in diglyme, followed by H₂O₂, to give the 2,3-trans-unsaturated aldehyde (III), b.p. 65°. Similarly, ethylation of 1,2-O-isopropylidene-D-glycerinaldehyde gave a 3:2 mixture of 3-epimeric pentyne derivs., separable as the 3-acetates (V) by g.l.c. One epimer had [α]_D 20D -41° (CHCl₃), and the other [α]_D 30D 50° (CHCl₃). Treatment of V with IV, followed by H₂O₂, gave trans-2,3-dideoxy-4,5-O-isopropylidene-aldehyde-D-glycero-2-pentose, the 5-carbon analog of III. Structures given were supported by ir and N.M.R. data.

L5 ANSWER 45 OF 52 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1964:484851 CAPLUS
DOCUMENT NUMBER: 61:84851
ORIGINAL REFERENCE NO.: 61:14839c-g
TITLE: Modification of textile fiber properties by radiation-induced graft copolymerization
AUTHOR(S): Armstrong, Arthur A., Jr.; Walsh, William K.; Rutherford, Henry A.

SOURCE: U.S. At. Energy Comm. (1963), NCSC-2477-11, 132 pp.
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB The modification of fiber properties by exposure to radiation and by graft copolymerization (GP) is described. The radiation source was a 60Co γ-cell 220. The predominant effect of radiation on fibers was degradation. No improvement of the phys. properties of textile fibers by radiation alone was indicated. Vapor-phase GP to textile fibers initiated by γ radiation was investigated for (a) variables affecting the rate of GP; (b) modification of fiber properties by GP; and (c) kinetics and diffusion in the vapor-phase GP process. The effects of process variables on the rate of grafting were: (1) higher carrier-gas flow rates increased the rate of grafting; (2) higher temps. decreased the rate of grafting; (3) the presence of a 3rd component (e.g. H₂O, MeOH, or AcOH) increased the rate of grafting to acetate and nylon, and was necessary for grafting to cotton, rayon, and wool; (4) O inhibited polymerization; (5) the rate of grafting depended on the fiber and the monomer; the order of reactivity for fibers was acetate > polypropylene > nylon > cotton > rayon > wool > polyester > acrylic; the order of reactivity of the monomers studied was Me methacrylate > Et acrylate > acrylonitrile > butadiene > vinyl acetate > Me acrylate > vinyl chloride > styrene; (6) chemical modification of the cellulose increased the rate of grafting to cotton; (7) the lifetimes of free radicals produced by irradiation were long enough to use post-irradiation techniques. Radiation-induced vapor-phase GP of vinyl monomers to textile fibers was studied as a means to improve fiber properties with the following results: (1) cotton was completely resistant to microorganism attack and had increased resistance to heat after grafting with acrylonitrile; (2) polypropylene fiber was dyeable with disperse dyes after grafting with vinyl acetate, Me acrylate, and Et acrylate; (3) nylon and polypropylene had improved weather resistance after grafting with styrene; (4) cotton cloth had improved crease recovery after grafting with allyl acrylate, followed by cross-linking by radiation and grafting with methylacrylamide; (5) nylon had increased dimensional stability at 290° after grafting with allyl acrylate, acrylic acid, or a combination of acrylic acid with a cross-linking monomer, and had 30-50% increased modulus after grafting with acrylic acid alone or in combination with a cross-linking monomer. A preliminary study of the effects of diffusion and kinetics on the vapor-phase GP of acrylonitrile to various textile fibers showed that the effects are complex and cannot be represented by simple math. solutions. Empirical relations were obtained which adequately represented the more complex cases.

L5 ANSWER 46 OF 52 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1964:24794 CAPLUS
DOCUMENT NUMBER: 60:24794
ORIGINAL REFERENCE NO.: 60:4439b-d
TITLE: Reaction gas chromatography
AUTHOR(S): Drawert, Friedrich
SOURCE: Abhandl. Deut. Akad. Wiss. Berlin, Kl. Chem., Geol. Biol. (1962), (1), 9-18
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB A reactor is interposed between the carrier gas supply and the anal. column in which the sample is transformed chemical to yield better separation of alcs. and polyols in aqueous solution if the reaction temperature permits, the reactor tube can be placed in the oven compartment in series with the anal. column. A sep. thermostat is used for high-temperature reactions. H₂O can be removed by a CaH₂ column ahead of the anal. column. Aqueous solns. of lower alcs. are acidified with either tartaric or oxalic acid and passed through a column containing a mixture of NaNO₂ and support material, or a NaNO₂-containing solution of the alcs. is passed through a reactor tube containing one of the acids. The nitrous acid

esters are separated much more readily than the alcs. When alcs., their mixture, or aqueous solns. are sprayed on hot acidic surfaces, dehydration yields the corresponding **olefins**, which can be readily separated. The method was used for blood alc. detns. Some alcs. can be determined by first hydrogenating over Raney Ni at 170-200° to the hydrocarbon. Bis(alkyl xanthogenato)nickel(II) complexes are split with dimethylglyoxime, and the alcs. liberated by acidification are determined by the **olefin** method. 2-Alkoxy-2-mercaptothiazolidines are readily converted to 2-mercaptothiazolines by splitting off an alc. which is determined as above. Aqueous glycerol is converted by HI to iso-PI, which is determined as propane by the hydrogenation method.

L5 ANSWER 47 OF 52 CAPLUS COPYRIGHT 2006 ACS ON STN
ACCESSION NUMBER: 1963:29840 CAPLUS
DOCUMENT NUMBER: 58:29840
ORIGINAL REFERENCE NO.: 58:5018d-e
TITLE: Gas-liquid chromatography of synthetic carboxylic acids and the corresponding alcohols
AUTHOR(S): Vasilescu, V.
CORPORATE SOURCE: Inst. Verfahrntechnik Org. Chem., Leipzig, Germany
SOURCE: Abhandl. Deut. Akad. Wiss. Berlin, Kl. Chem., Geol., Biol. (1959), (No. 9), 136-53
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB The products of paraffin oxides, namely C4-12 carboxylic acids and Cs-14 alcs. were separated by using high vacuum grease Number 20 (Carl Zeiss, Jena) on ground Kaolin "MEKA" as a carrier. The carboxylic acids were converted to the Me esters with CH2N2 and the alcs. were preferably acetylated before analysis.

L5 ANSWER 48 OF 52 CAPLUS COPYRIGHT 2006 ACS ON STN
ACCESSION NUMBER: 1961:101313 CAPLUS
DOCUMENT NUMBER: 55:101313
ORIGINAL REFERENCE NO.: 55:19070d-f
TITLE: Catalysts
INVENTOR(S): Dowden, Dennis Albert; Caldwell, Alexander M. U.
PATENT ASSIGNEE(S): Imperial Chemical Industries Ltd.
DOCUMENT TYPE: Patent
LANGUAGE: Unavailable
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO. _____ KIND DATE APPLICATION NO. DATE
US 977324 19610328 US
AB Catalysts suitable for the oxidation of aromatic hydrocarbons, and other compds., such as paraffins and **olefins**, each with at least 3 C atoms, aldehydes which yield carboxylic acids, and ketones, to O-containing compds. are processed from molten catalytic vanadyl vanadates (single solid phase or a mixture of solid phases, each phase containing at least 1 of the metals Ti, Ag, K, Na, Li, or Rb, together with the oxides of V where part of the V atoms have a valency of 2 to 4) by impregnation onto a porous, heat-resistant, solid support, such as Al2O3, SiO2, SiC, or firebrick. The preferred catalysts are supported Ti vanadyl vanadate and K; in these, the M2O:V2O5 molar ratio, where M is K or Ti, may be 0.001:1-0.3:1, but is conveniently 0.05:1. Thus, 1.29 g. Ti2CO3 and 10 g. of V2O5 were fused together and impregnated on particles of α-Al2O3 by dipping. A mixture of 21.2 g. o-xylene vapor and 480 l. air was passed over 50 ml. of the Ti vanadyl vanadate supported on α-Al2O3. At the operating temperature of 500°

the o-xylene was converted to phthalic anhydride with a conversion of 64.1% and a pass yield of 35.5%.

L5 ANSWER 49 OF 52 CAPLUS COPYRIGHT 2006 ACS ON STN
ACCESSION NUMBER: 1960:118497 CAPLUS
DOCUMENT NUMBER: 54:118497
ORIGINAL REFERENCE NO.: 54:22706a-f
TITLE: Addition of dinitrogen tetroxide to camphene and trans-stilbene; the effect of oxygen
AUTHOR(S): Stevens, Travis E.
CORPORATE SOURCE: Rohm and Haas Co., Huntsville, AL
SOURCE: Journal of the American Chemical Society (1959), 81, 3593-7
CODEN: JACSAT; ISSN: 0002-7863

DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
OTHER SOURCE(S): CASREACT 54:118497
AB When an excess of N2O4 was added in a dry N stream to an Et2O solution of camphene, the products isolated were: 5% dl-α-nitrocamphene (I), m. 64-5°; 35% 3-(nitromethyl)-3-hydroxycamphenilane (II), m. 37-9°; 30% 3-(nitromethyl)-3-nitrocamphenilane (III), m. 141-3°; and a trace of a nitrate ester, probably 2-nitro-10-nitrocamphene (IV). II (formed by the hydrolysis of 3-(nitromethyl)-3-nitrocamphenilane) and III were the usual products of homolytic reaction of N2O4 with **olefins**. Treatment of II and III with a solution of KOH in 50% EtOH 30 min. gave I, 59 and 56%, resp. Similarly, base treatment of the crude camphene-N2O4 mixture gave I in 40% yield. With O as the carrier gas, the camphene-N2O4 reaction gave a mixture of products including 3-6% IV, 20-8% 3-isopropylidenecyclopentyl nitromethyl ketone (V), m. 76-7°, 30% nitroacids of undet. structure, and a total of 6% II or III or both. The structure of V was established by its base-catalyzed cleavage to 3-isopropylidenecyclopentanecarboxylic acid (VI), m. 50°. VI was found to be identical with camphoic acid (prepared by the hydrolysis of the nitrile produced in the camphenilone oxime-AcCl reaction); ozonolysis of VI produced cyclopentanone-3-carboxylic acid, confirming the identity. The UV spectra of V had: in EtOH, 230 mμ (sh, ε 3200) and 316 mμ (ε 660); in 50% EtOH-50% 0.1N NaOH, 234 mμ (ε 4500) and 331 mμ (ε 19,600). When an excess of N2O4 was swept with N into an Et2O solution of stilbene, the products (after hydrolysis of the nitronitriles) included 20.8% meso-α,α'-dinitrobenzyl, m. 235-7°, 32.2% dl-α,α'-dinitrobenzyl, m. 149-51°, 10.4% erythro-α-hydroxy-α'-nitrobenzyl (VII), m. 99-100°, and 12.6% threo-α-hydroxy-α'-nitrobenzyl (VIII), m. 105.5-6.3°. With O as carrier gas, the products varied with minor changes in reaction conditions producing from 13.8 to 28.8% mixture consisting of 44% VII and 56% VIII, from 5.4 to 24.9% of a mixture consisting of 65% erythro- and 35% threo-α-nitro-α'-nitrobenzyl (threo- m. 96°, erythro- m. 165°), from 14.8 to 24.2% α-nitro-α-phenylacetophenone (IX), m. 75.0-5.5°, 0-7.4% PhCO2H, and 0-1.1% PhCHO. Treatment of IX with alc. NaOH produced PhCO2H and PhCH2NO2. It was suggested that the nitroalkyl radicals reacted with O to form nitroperoxy or nitroperoxy-nitrate radicals.

L5 ANSWER 50 OF 52 CAPLUS COPYRIGHT 2006 ACS ON STN
ACCESSION NUMBER: 1959:121688 CAPLUS
DOCUMENT NUMBER: 53:121688
ORIGINAL REFERENCE NO.: 53:21750g-1,21751a-f
TITLE: Mechanism of the Michaelis-Arbuzov reaction: olefin formation
AUTHOR(S): Garner, Albert Y.; Chapin, Earl C.; Scanlon, Patricia M.
CORPORATE SOURCE: Monsanto Chem. Co., Springfield, MA
SOURCE: Journal of Organic Chemistry (1959), 24, 532-6

CODEN: JOCEAH; ISSN: 0022-3263

DOCUMENT TYPE:

Journal

Unavailable

CASREACT 53:121688

Unavailable

AB

SOURCE(S):

reaction in terms of the Michaelis-Arbuzov

intermediate. The production of olefin and dialkyl phosphonium salt

which has an activating group on the p-C is treated with a trialkyl

phosphite. The formation of these products is explained in terms of an

intramolecular β -elimination involving the quasi-phosphonium salt

intermediate. PhCH₂CH₂Br (92.5 g.), 74.9 g. NaI, and 50 ml. Me₂CO

refluxed overnight gave 92 g. PhCH₂CH₂I (I), b.p. 11.71°, n_D²⁰ 1.5945,

Triphenyl- β -phenethylphosphonium iodide (5 g.) left overnight with

excess 10% aqueous NaOH gave 2.5 g. diphenyl phenethylphosphonate (II),

needles, m. 75-6° (hexane). I (73 g.) and 146.2 g. P(OPh)₃ heated

5 days at 128°, the mixture mixed with Et₂O and Me₂CO until it was

cream-colored, and the solvent removed gave 28.3 g.

triphenylphenethylphosphonium iodide (III), m. 154-7° (sealed

tube), gave an immediate precipitate with AgNO₃ which was insol. in dilute

HNO₃.

MeCHBr₂ (7.52 g.) refluxed 1.5 hrs. at 131° with addition of 183 g.

P(OEt)₃, and heated 3.5 hrs. at 145°, 110.8 g. EtBr removed, and

the residue fractionated gave 509.6 g. unreacted dibromide. The

first-boiling fraction of 33.7 g. consisted of a mixture of di-Et

vinylphosphonate, di-Et phosphonate, and di-Et ethylphosphonate as shown

by infrared analysis and vapor phase chromatography.

Subsequently 127 g. di-Et β -bromoethylphosphonate (IV), b.p.

90°, n_D²⁰ 1.4564, was obtained. An intermediate fraction (7.7 g.),

n_D²⁰ 1.4473, which contained some tetraethyl ethylenephosphonate, was

followed by the sudden evolution of 13.4 g. of material which dropped the

head temperature to 30°/2 mm., and had n_D²⁰ 1.4350, shown to be pure

di-Et vinylphosphonate (V). IV (50.7 g.) heated to 157°, and 35.3

g. distilled P(OEt)₃ (VI) added dropwise in 3 hrs., the heating continued to

a total of 6 hrs., and 17.9 g. EtBr removed, and vacuum distilled gave 28.8

g. of low boiling material of approx. 64.3% diethyl phosphonate, 25.8% V,

6.9% diethyl ethylphosphonate (VII), and 2.9% of unknown material. A

higher boiling fraction consisted of 16.2 g. tetraethyl

ethylenephosphonate (VIII), b.p. 151-7°, n_D²⁰ 1.4397. Redistd. VI

(90 g.) added dropwise during 3 hrs. to 100 g. Et β -bromopropionate

at 155°, the mixture heated 5 hrs., and 48.4 g. EtBr removed during

the heating. Vacuum distillation gave 21.9 g. material, b.p. 66-86°.

whose infrared spectrum showed it to be di-Et phosphonate and probably

VII. 80 g. Et 3-diethylphosphonopropionate, b.p. 114-15°, n_D²⁰

1.4301, and 24.1 g. poly(ethyl acrylate), n_D²⁰ 1.3975. The acrylate

monomer and polymer were identified by their infrared spectra. PhCH₂CH₂Br

(100 g.) heated to 165°, treated dropwise with 90.9 g. VI, the

temperature rose slightly, and further heated for approx. 20 hrs. gave 33.6 g.

EtBr; the mixture distilled in vacuo gave 43.9 g. of 1st fraction containing

diethyl phosphonate, VII, and unreacted material; the 2nd fraction was

mostly VII. 3.9 g.; and the 3rd fraction of 68.8 g. consisted of di-Et

phenethylphosphonate, b.p. 144-7°, n_D²⁰ 1.4925. The residue was

dissolved in C₆H₆ and 3.2 g. polystyrene was precipitated by MeOH. The cold

trap

contained 10.4 g. impure styrene. VIII heated 5.5 hrs. at 211° and

the material pumped down and heated gave no low-boiling materials. II

(8.1 g.) was heated 2 hrs. at 210°/0.15 mm. without decomposition and

heated again 4.5 hrs. at 250-305°/5 mm., still without decomposition II

was recovered. Then the sample was heated at atmospheric pressure up to

390° to give a trace of H₂O, and a viscous brown residue, which was

strongly acidic. The odor of styrene was strong in the trap but no

styrene was isolated. The infrared spectrum showed polystyrene to be

absent. III (10 g.) was dried overnight in vacuo, and heated 4 hrs. at

210-20°/0.15 mm.; the Dry Ice traps contained a small amount of

liquid which had the odor of PhI and hinted at the presence of styrene.

Vapor phase chromatography showed the presence of a little styrene. The residue was crystallized to give II.

L5 ANSWER 51 OF 52 CAPLUS COPYRIGHT 2006 ACS ON STN

ACCESSION NUMBER: 1955:56835 CAPLUS

DOCUMENT NUMBER: 49:56835

ORIGINAL REFERENCE NO.: 49:11003c-e

TITLE: Ketones

INVENTOR(S): Natta, Giulio; Ercoli, Raffaele

PATENT ASSIGNEE(S): "Montecatini" Societa Generale per l'Industria

Mineraria e Chimica

PATENT TYPE: Patent

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION: Unavailable

PATENT NO. IT 475040

KIND DATE APPLICATION NO. DATE

IT 475040 19521009 IT

AB The process involves a reaction of olefins (including mixts.

with paraffins) with CO (containing up to 10% H as an impurity) and primary or

secondary alcs., at 150-250° and 150-500 atmospheric pressure, in the

presence of Co-containing catalysts (fine Co. Raney Co. Co on an inert

carrier, Co carbonyl or hydrocarbonyl, or other Co compds. which

decompose to the ones mentioned). Examples are: (1) Secondary BuOH (I) 87

g., ethylene (II) 41.5 g., Raney Co (III) 4 g., and CO 140 l. in a 1-1.

autoclave are shaken and warmed to 200-10° for 5 hrs., and cooled.

Gas analysis shows that 25% of II did not react, while the liquid

phase was shown to contain ketones 42.5, II 43.5, and propionaldehyde (IV)

3%. The yield of EtCO (VI) was 65% based on the weight of II reacted; (2)

MeOH 75 g., II 25 g., and CO 180 l. were treated in the

autoclave at 190-95° for 85 hrs. to give: unreacted II 19%, and V

53%. Me propionate 20, and IV 7%, (based on the weight of II reacted; (3)

MeOH 220 g., propylene (VI) 84 g., III 16 g., and CO 103 l. at

200-10°, and 150-300 atmospheric yielded unreacted VI 49% and C7-ketones

27.5, Me butyrate and isobutyrate 33% based on the weight of VI reacted.

L5 ANSWER 52 OF 52 CAPLUS COPYRIGHT 2006 ACS ON STN

ACCESSION NUMBER: 1939:32391 CAPLUS

DOCUMENT NUMBER: 33:32391

ORIGINAL REFERENCE NO.: 33:4579b-1,4580a-h

TITLE: Oxidation of ethylenic hydrocarbons with selenium

dioxide

AUTHOR(S): Guillemonat, Andre

SOURCE: Annali di Chimica Applicata (1939), 11, 143-211

CODEN: ACAPAR; ISSN: 0363-1037

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

OTHER SOURCE(S): CASREACT 33:32391

AB I. Pulverized SeO₂ (from the oxidation of Se in the presence of nitrous

vapors) is slowly introduced into a mixture of AcOH, Ac₂O and excess

hydrocarbon while stirring vigorously so that the reagent does not settle

to the bottom of the flask. The SeO₂ disappears slowly and Se ppts. The

reaction mass turns yellow, orange and finally deep brown. When all the

SeO₂ has reacted, the mixture is refluxed for at least 10 h., cooled, the Se

separated, and the excess AcOH and Ac₂O are removed by washing with H₂O. The

crude colored product is steam-distilled and the residue pyrolyzed at

atmospheric

pressure or under a vacuum. The pyrolysis products differ from the

products in the distillate. Oxidation in a basic medium (pure pyridine) was

unsuccessful. Various solvents were tried, including EtOH, xylene, H₂O,

but AcOH proved most favorable both as to yield and product quality. In

all instances the double bond is preserved. II. Oxidation of completely

substituted ethylenic C atoms. 1. Aliphatic hydrocarbons. In all instances

an appreciable amount of the initial hydrocarbon is recovered unattacked.

The oxidation occurs on the C in the α -position to the substituted atom; there is formed an alc. of the structure $\text{RCH(OH)CMe}_2\text{CHMe}$. In order of decreasing ease of oxidation the radicals are CH_2 , Me, CH. The rates of oxidation are so different that only 1 of the possible alcs. forms if the radicals in the α -position are different. 2-Methyl-2-butene forms the acetate of 2-methyl-2-buten-1-ol, which on saponification with Ba(OH)_2 yields the alc., b760 136-8°. Likewise, 3-methyl-2-pentene forms 3-methyl-3-penten-2-ol, b18 34-6°. 2,3-Dimethyl-3-pentene (from the oxidation of 3-methyl-3-pentene by SeO_2 to 3-methyl-3-penten-2-ol, bromination by PBr_3 and reaction of the bromide with MeMgBr), b760 91°, d421 0.720, nD21 1.4135, oxidizes to 2-isopropyl-2-buten-1-ol, b760 65-7°. 2,2,3-Trimethyl-3-pentene forms 2-tert-butyl-2-buten-1-ol, b22 82°. 2-Methyl-2-pentene yields 2-methyl-2-penten-1-ol, b14 at 61-3°. 3-Phenyl-3-pentene forms 3-phenyl-3-penten-2-ol, b20 127-30°. 2. Cyclic hydrocarbons. It was observed that oxidation will occur in the α -position to the most substituted C atom and also in the cycle if it is possible. Oxidation of the α -phenyl group leads to conjugated dienes by way of the dehydration of tertiary alcs. Conjugated dienes also result from the oxidation of hydrocarbons possessing cyclic bi-tertiary double bonds. Thus, 1-ethylcyclohexene yields 30% of a liquid acetate of 1-ethylcyclohexen-6-ol which hydrolyzes to the corresponding alc., b12 82-83°. 1-Ethylcyclopentene forms 1-ethylcyclopenten-5-ol, b20 74-5°. 1,6-Dimethylcyclohexene oxidizes to 5 fractions, b. 127-8°, 130.5°, 132.5°, 134° and 135.5°. Each fraction contains o-xylene, a quantity of a liquid b760 132.5°, nD20 1.4682, d420 0.832, and also 2,3-dimethyl-1,3-cyclohexadiene, identified by its maleic anhydride derivative, m. 122-3°. 1,2-Dimethylcyclohexene oxidizes to form 2 fractions. The 1st consists of o-xylene, and 2,3-dimethyl-1,3-cyclohexadiene, identified as above and also by its derivative with (1-phenyl-2-oxo-2-methyl-2-propanone)2, b760 165-70°, which is hydrogenated to 4,5-dimethyl-1,2-phthalic acid, m. 196°. The 2nd fraction is a mixture of 2 acetates, one ethylenic and one dienic, yielding, on saponification, alc. products b23 95°, nD19 1.500, d419 0.971, but not in sufficient amts. to identify. III. Oxidation of hydrocarbons neither of whose ethylenic C atoms is completely substituted. 1. Aliphatic hydrocarbons. Again, oxidation occurs in the α -position to the ethylenic C. The CH_2 radical oxidizes more readily than Me. A double bond at the end of the chain is active as a bi-secondary bond but due to transposition a primary alc. forms instead of a secondary alc. If a CH_2 radical is present on each side of the ethylenic C, both are oxidized and a mixture of alcs. forms which it is impossible to sep. Thus, 2-pentene forms the acetate of 2-penten-4-ol which is saponified to the corresponding alc., b760 118-21°. 1-Hexene yields 2-hexen-1-ol, b760 156°, with a small amount of 1-hexen-3(?)ol. 4-Nonene on oxidation yields a liquid, b15 89-91°, which on saponification forms a viscous liquid, b11 85-7°, and which is hydrogenated to a substance b18 90-1°. All attempts to prepare crystalline derivs. have failed. Presumably, the product is a mixture of nonenols formed by oxidation of the two CH_2 groups in the α -position to the ethylenic C atoms. Likewise, 3-nonene forms an acetate, b17 99-101°, which is saponified to nonenols, b15 93-5°, and hydrogenated to a mixture of nonanols, b17 93°. As in the preceding case no crystalline derivs. could be prepared. 2. Cyclic hydrocarbons. While not so reactive as compds. with double-linked tertiary C atoms, cyclic hydrocarbons with bi-secondary ethylenic bonds do produce yields as high as 30-40%. Again the α -position is attacked. The CH_2 group is more active than the CH. Again, also, both possible CH_2 groups are attacked simultaneously. Transpositions of the allylpropenyl type occur readily. Thus, cyclohexene yields the acetate of 1-cyclohexen-3-ol, b15 68-70°, saponifying to the corresponding alc., b15 67°, identified by its phenylurethane, m. 106 5-7.5°. Oxidation by CrO_3 forms the corresponding ketone whose semicarbazone m. 161°. 3-Methylcyclohexene likewise produces 6-methylcyclohexen-3-ol, b20 88-90°, which is hydrogenated to 4-methylcyclohexanol, b760

169°. Small amts. of MePh, 4-methylcyclohexene and 4-methylcyclohexen-3-ol also result from the oxidation of 4-methylcyclohexen-3-ol, b22 81-3°, the 1st predominating. The 3 corresponding alcs. formed on saponification, b6 63°. Another fraction, b22 82-3°, is obtained which is also a mixture of the 3 acetates above but with the 5-Me derivative predominating. For all the oxidation products the author gives b. p., d., n, mol. refraction, as well as m. ps. of the various derivs. mentioned and in some cases C and H analyses. IV. Mechanism of the oxidation. The postulated mechanism may best be represented by means of the following equations in which R is a radical containing the ethylenic bond: (1) $4\text{RCH}_2\text{H} + \text{SeO}_2 \rightarrow (\text{RCH}_2)_4\text{Se} + 2\text{H}_2\text{O}$ (2) $(\text{RCH}_2)_4\text{Se} + \text{H}_2\text{O} \rightarrow (\text{RCH}_2)_2\text{Se} + \text{RCH}_3 + \text{SeO}_2$ (3) $(\text{RCH}_2)_2\text{Se} + \text{H}_2\text{O} \rightarrow \text{RCH}_2\text{OH} + \text{RCH}_3 + \text{Se}$ (4) (Mech: $\text{CMeCH}_2)_2\text{Se} + \text{CH}_2\text{:CHCMe:CH}_2 + \text{Me}_2\text{C:CHMe} + \text{Se}$ This proposed mechanism explains (1) the fact that a portion of the original hydrocarbon is recovered although the theor. amount of SeO_2 is used, (2) the formation of an alkyl acetate even at low temps. since HOAc may supplant HOH in reaction 2 above, (3) the formation of an ether oxide in an absolute alc. medium by a mechanism similar to that which furnishes the acetate and (4) the formation of dienes with conjugated systems. This mechanism is supported by exptl. data on the oxidation of trimethylethylene in benzene. V. A complete table of the Raman spectra of all the compds. mentioned in the previous chapters is given, 38 compds. being listed in all.

=> LOG HOLD	SINCE FILE	TOTAL
COST IN U.S. DOLLARS	ENTRY	SESSION
FULL ESTIMATED COST	243.27	244.11
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
CA SUBSCRIBER PRICE	ENTRY	SESSION
	-42.75	-42.75

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